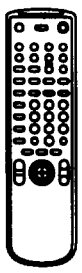
SERVICE MANUAL

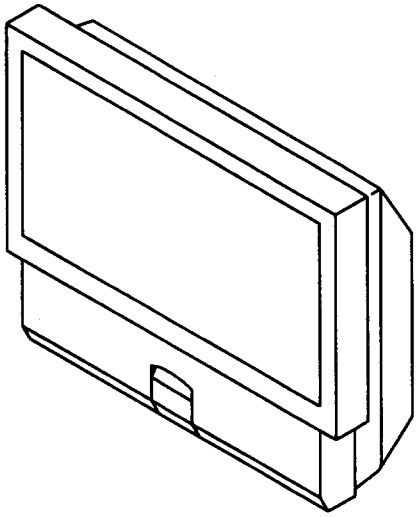
LE-2 CHASSIS

MODEL	COMMANDER	DEST.
KL-40WA1	RM-862	AEP
KL-40WA1K	RM-862	OIRT
KL-40WA1U	RM-862	UK

MODEL	COMMANDER	DEST.



RM-862



KL-40WA1/40WA1K/40WA1U

LCD PROJECTION TV

SONY

MICROFILM

※Please file according to model size...

40

Specifications

This product complies with the EU Directive 89/336/EEC.

Television system	B/G/H, D/K, I, L
Colour system	PAL/SECAM NTSC 3.58/4.43 (VIDEO IN)
Channel coverage	See "Receivable channels and channel displays" at the bottom.
Projected picture size	40 inches Approx. 101.6 cm measured diagonally
Terminals	
Rear	Center speaker input terminals, 2 terminals (L, R), audio outputs - phono jacks 1, 21-pin Euro connector (CENELEC standard) - inputs for audio and video signals - inputs for RGB - outputs of TV audio and video signals 2/ 2, 21-pin Euro connector - inputs for audio and video signals - inputs for S video - outputs for audio and video signals (selectable) 4/ 4, 21-pin Euro connector - inputs for audio and video signals - inputs for S video - outputs for audio and video signals (monitor out)
Front	3, S video inputs - 4-pin DIN 3, video inputs - phono jacks (L, R), audio inputs - phono jacks , headphones jack - stereo minijack
Sound output	2 x 20 W (music power) 2 x 15 W (RMS) 50 W (RMS) (using as the centre speaker)
Power consumption	182 W
Dimensions (W x H x D)	980 x 834 x 399 mm (38⅝ x 32⅞ x 15¾ inches)
Mass	27 kg (59 lbs 8 oz)
Supplied accessories	See page 6.
Other features	Digital comb filter (High resolution) FASTEXT DCI (Digital Constant Image)

Design and specifications are subject to change without notice.

Receivable Channels and Channel Displays

	Receivable channels	Indication on the screen
B/G/H	E2..12 21..69	C02 C03 C04..C12 C21..C69
CABLE TV (1)	S1..41	S01 S02..S41
CABLE TV (2)	S01..S05 M1..M10 U1..U10	S42..S46 S01..S10 S11..S20
ITALY	A B C D E F G H H1 H2 21..69	C11..C69
D/K CABLE TV (1) CABLE TV (2)	R01..R12 R21..R69	C02..C12 C21..C69 S01 S02..S41 S42 S43..S46
CABLE TV	B..Q, S21..41	S02, S03..S17, S21..S41
L	F2..F10 F21..F69	C01..C12 C21..C69
I	B21..B68	C21..C68

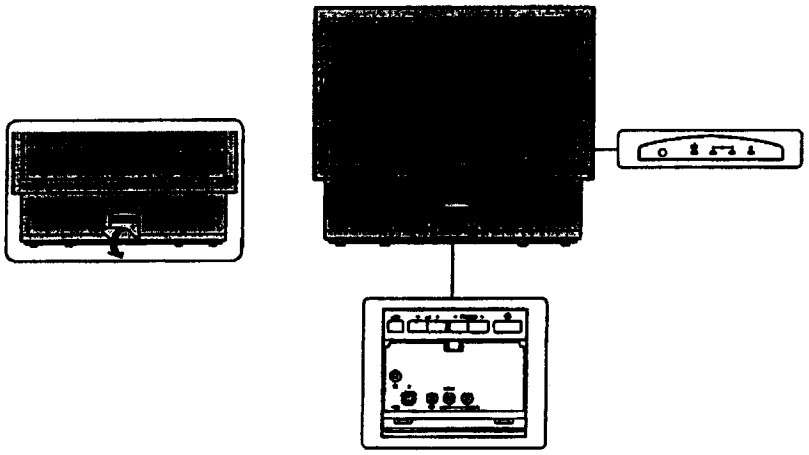
The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

SECTION 1
GENERAL

Overview

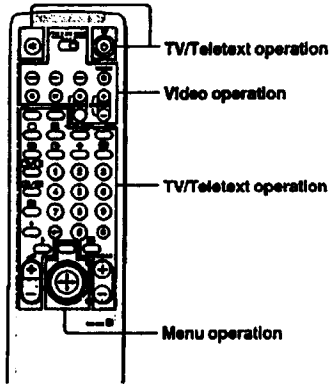
This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

TV set-front



Symbol	Name	Refer to page
⏻	Main power switch	14
⏻	Standby indicator	14, 31
A-CD-B	Stereo A/B indicators	17
	Lamp indicator	29, 31
PROGR+/–	Programme	14
+/–	Volume buttons	14
	Input select buttons	15
Ω	Headphones jack	23
3, 3, 3	Input jacks (S video/video/audio)	24

Remote commander



TV/Teletext operation

Symbol	Name	Refer to page
	Mute on/off button	15
TV ⏻	TV Standby button	14
	TV power on/TV mode selector button	14
	Teletext button	15
/	Input mode selector/	15
	Teletext: Freezing the subpage	20
/	Output mode selector/	24
	Teletext: Reveal button	20
1,2,3,4,5,6, 7,8,9 and 0	Number buttons	14
-/--	Double-digit entering button	14
C	Direct channel entering button	9
+/–	Volume control button	14
PROGR +/–	Programme selectors	14
	Teletext: Page up/page down buttons	20
	Picture adjustment button	16
♪	Sound adjustment button	16
	On-screen display button	15
	Time display button	15
	"Freeze" button	15
	Button to change Screen Format	15
	Teletext: Favourite pages button	22

Menu operation

Symbol	Name	Refer to page
MENU	Menu on/off button	See below.
	Joystick for Menu selection Press to confirm selection (OK function)	See below.

Video operation

Symbol	Name	Refer to page
VTR1/2/3, MDP	Video equipment selector	26
◀◀ ▶ ▶▶ ■ ❚❚ ● VIDEO ⊖ CH +/–	Video equipment operation buttons	26

No function on this set

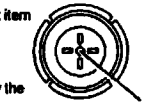
Symbol: /, /, , , ,

For the Menu System

Use the MENU button and the joystick as follows.

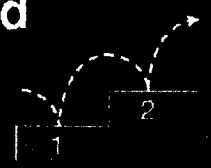
1 Press MENU button to switch menu on or off.

2 Use the joystick as follows:

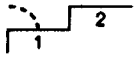

GREEN: scroll up
RED: decrease/back to last item or to last menu When menu is not displayed: Push to red to display the last menu screen
YELLOW: increase/forward to next item
Joystick: Press at its neutral position to confirm selection or store
BLUE: scroll down

The operable functions of the joystick are displayed on the screen.

Getting Started



Step 1 Preparation

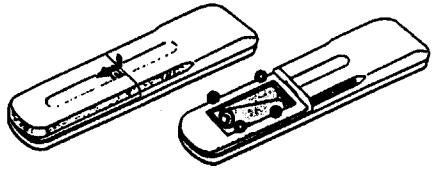


1 Check the supplied accessories

When you've taken everything out of the carton, check that you have these items:

- RM-862 Remote Commander
- Two IEC designation R6 batteries
- Wrench (1)
- Bracket (2)

2 Insert the batteries into the Remote Commander

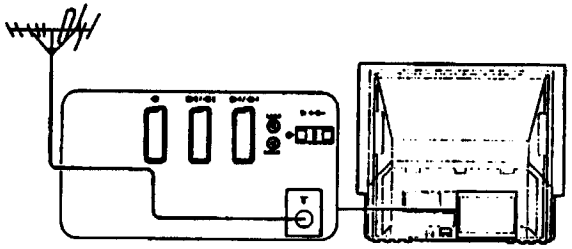


Remove the cover.

Check the correct polarities.

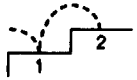
Note: Always remember to dispose of used batteries in an environmentally friendly way.

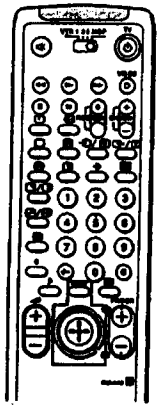
3 Connect the aerial

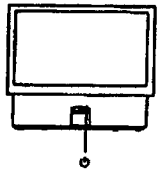


Fit an IEC aerial connector attached to 75-ohm coaxial cable (not supplied) to the 'T' socket at the rear of the TV.

Step 2 Tuning in to TV Stations







To go back to the normal TV picture Press MENU. Normal TV picture will be restored after one minute if menu functions are not selected.

Note on the Demo function
If you choose Demo in the INSTALLATION menu, you can see a sequential demonstration of the menu functions. Press MENU to stop the function.

1 Choosing the Menu Language and the Country

Using this function, you can select the language of the menu screens. Also, you can select the country in which you will use the TV. In this way, the channels of the selected country will automatically get the top positions during automatic presetting.

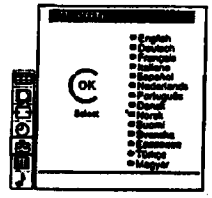
1 Press the power switch ⏻ on the TV.
If the standby indicator ⏻ on the TV is lit, press ○ or a number button on the Remote Commander.

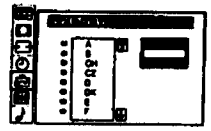
2 Press MENU on the Remote Commander.
The LANGUAGE menu appears.

3 Push the joystick to blue or green to select the language. Press the joystick to confirm your selection.
The COUNTRY menu appears.

4 Push the joystick to blue or green to select the country in which you wish to operate the TV. Press the joystick to confirm the selection.

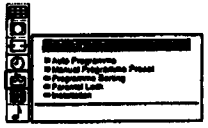
5 Press MENU to restore the normal TV picture.

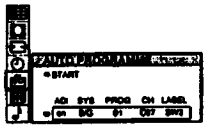




GB

❷ Presetting Channels Automatically





With this function, the TV automatically searches and stores up to 100 channels onto programme positions. If you prefer "Presetting Channels Manually", please refer to page 9 in Additional Presetting Functions.

1 Press MENU.

2 Push the joystick to blue or green to select the symbol 🖃 on the menu screen, then push to yellow.

3 Push the joystick to blue or green to select "Auto Programme", then push to yellow.
The AUTO PROGRAMME menu appears.

4 a) All items shown on the menu screen are as wanted: Press the joystick to select START.
Now the automatic channel presetting starts from programme position 1.

or

4 b) You wish to change items as shown on the menu screen: Push the joystick to blue or green. Push to yellow repeatedly until the desired item is highlighted.

Push the joystick to blue or green to select the following options:

ACI (Automatic Channel Installation, depending on availability of service in your country)
on: fast channel presetting by special networks using the channel frequency (e.g. F055)
TV-system and station label
off: ACI is not active, only ITP (Intelligent Tuner Preset)

SYS (TV Broadcast System)
I for U.K.
B/G for Western European Countries
D/K for Eastern European Countries
L for France.

PROG (Programme Position)
Presetting automatically starts from position 1.

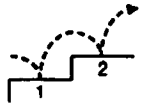
CH (channel)
C to start presetting with terrestrial channels
S to start presetting with cable channels
Press the joystick as soon as the automatic presetting starts.

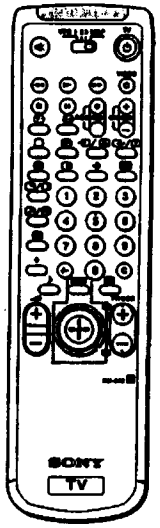
Notes

- After presetting the channels automatically, you can check which channels are stored on which programme positions.
For details, see "Displaying the Programme Table" on page 15.

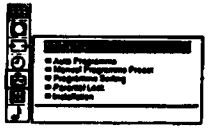
- You can sort the programme positions to have them appear on screen in the order you like.
For details, see "Sorting Programme Positions" on page 10.

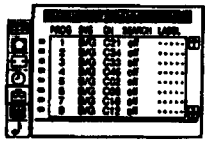
Additional Presetting Functions





Presetting Channels Manually





Using this function, you can preset channels one by one to different programme positions. This is also convenient to allocate programme numbers to video input sources.

1 Press MENU.

2 Push the joystick to blue or green to select the symbol 🖃 on the menu screen. Push to yellow to confirm the selection.

3 Push to blue or green to select "Manual Programme Preset". Push to yellow to confirm the selection.

4 Push to blue or green to select the programme position (PROG) to which you want to preset a channel. Push to yellow to confirm.

5 Push to blue or green to select the TV broadcast system (SYS) (I for U.K., B/G for western European countries, D/K for eastern European countries, L for France) or a video input source (EXT). Push to yellow to confirm.

6 Push to blue or green to select "C" (for terrestrial channels), "S" (for cable channels) or "F" (for channel frequency). Push to yellow to confirm.

There are two options to preset channels manually:

a) You know the channel number or channel frequency.
Please use method "Direct Input".
or

b) You don't know the channel number or frequency.
Please use method "Search".

7 a) Direct Input

For channel numbers, you need to input a two digit number, for the frequency, a three digit number.

- Push to blue or green to select the first digit of the channel number or frequency. Push to yellow to confirm.
- Push to blue or green to select the second digit of the number or frequency. Push to yellow to confirm. In case of the channel number, the search starts.
- Push to blue or green to select the third digit of the frequency number. Push to yellow to start the search of the frequency.
- To continue search for another channel: Push to blue or green.
- To store the selected channel: Press the joystick.
- Repeat steps 4 to 7 a) to preset other channels.

7 b) Search

- Push repeatedly to yellow until a blue and a green arrow appear in the section SEARCH.
- Push to blue or green to search for the next available channel.
- To continue search for another channel: Push to blue or green.
- To store the selected channel: Press the joystick.
- Repeat steps 4 to 7 b) to preset other channels.

GB

PROGRAMME SORTING

Sorting Programme Positions

This function enables you to sort the programme positions to a preferable order.

1 Press MENU.

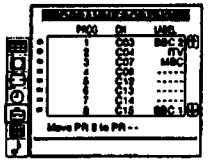
2 Push the joystick to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select "Programme Sorting". Push to yellow to confirm.

4 Push to blue or green to select the programme position of the channel you want to change. Press joystick to confirm.

5 Push to blue or green to select the new programme position. Press joystick to confirm.
Now the selected channel is changed to the new programme position.

6 Repeat steps 4 and 5 to sort other programme positions.



To go back to the normal TV picture Press MENU.

GB

Using "Further Programme Preset"

Using the FURHTER PROGRAMME PRESET menu you can:

a) individually adjust and store the volume level of each channel (Volume offset).

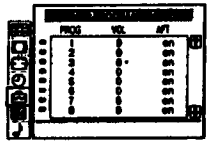
b) in case of picture distortions, use manual fine tuning to obtain a better picture quality. The factory setting is "on" for AFT (Automatic Fine Tuning).

1 Press MENU.

2 Push the joystick to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select "Installation". Push to yellow to confirm.

4 Push to blue or green to select "Further Programme Preset". Push to yellow to confirm.



5 Push to blue or green to select the programme position you want. Push to yellow repeatedly to select:
a) VOL (Volume Offset) or b) AFT (Automatic Fine Tuning).
The selected item changes its colour.

6 a) VOL

Push to blue or green to adjust the volume for the selected programme position within a range of –7 to +7. Press the joystick to confirm. Repeat step 6 to set the volume level for other programme positions.

6 b) AFT

Push to blue or green to fine-tune the channel within a range of –15 to +15. Press the joystick to confirm. Repeat step 6 to fine-tune other channels.

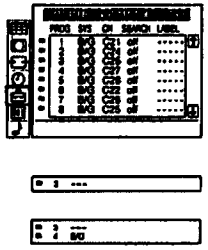
7 Press MENU to restore the normal TV picture.

MANUAL PROGRAMME PRESET

Skipping Programme Positions

This function enables you to skip unused programme positions when selecting them with the PROGR +/– buttons. However, by using the number buttons you can still select the skipped programme position.

1 Press MENU.
2 Push the joystick to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.
3 Push to blue or green to select "Manual Programme Preset". Push to yellow to confirm.
4 Push to blue or green to select the programme position you want to skip. Push to yellow to confirm.
5 Push to blue or green to select "- - -" in the position SYS (system). Press the joystick to confirm.
6 Repeat steps 4 and 5 to skip other programme positions.
7 Press MENU to restore the normal TV picture.



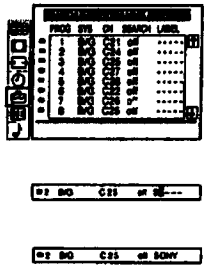
To go back to the normal TV picture Press MENU.

MANUAL PROGRAMME PRESET

Captioning a Station Name

Channels are automatically labelled during presetting. You can, however, individually name a channel or a video source using up to five characters.

1 Press MENU.
2 Push the joystick to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.
3 Push to blue or green to select "Manual Programme Preset". Push to yellow to confirm.
4 Push to blue or green to select the programme position with the channel you want to label. Push to yellow repeatedly until the first element of the position LABEL is highlighted.
5 Push to blue or green to select a letter or a number (select "-" for a blank). Push to yellow to confirm. Select the other four characters in the same way.
6 After selecting all characters, press the joystick to confirm.
7 Repeat steps 4 to 6 to label other channels or video sources.
8 Press MENU to restore the normal TV picture.

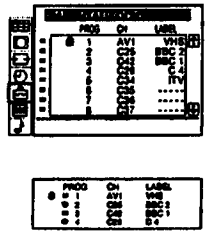


PARENTAL LOCK

Using Parental Lock

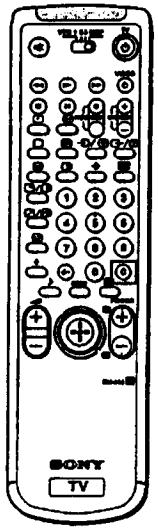
This function enables you to prevent children from watching undesirable broadcasts.

1 Press MENU.
2 Push the joystick to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.
3 Push to green or blue to select "Parental Lock". Push to yellow to confirm.
4 Push to green or blue to select the channel you want to block. Press the joystick to confirm.
The symbol 🔒 appears before the programme position to indicate that this channel is now blocked.
5 Repeat step 4 to block other channels.
6 Press MENU to restore the normal TV picture.



If you try to select a programme that has been blocked
The message "LOCKED" appears on the blank TV screen.

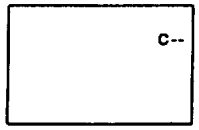
To unblock
Select the channel to unblock in the "PARENTAL LOCK" menu. Press the joystick. The symbol 🔒 disappears.



Tuning In a Channel Temporarily

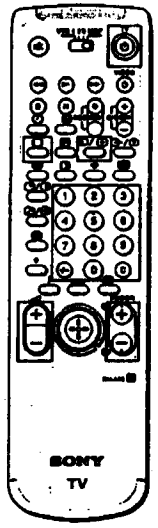
You can tune in to a channel temporarily, even though it has not been preset.

1 Press C on the Remote Commander. For cable channels, press C twice.
The indication "C" ("S" for cable channels) appears on the screen.
2 Enter the double-digit channel number using the number buttons (e.g. for channel 4, first press 0, then 4).
The channel appears. Note that the channel will not be stored.



Operating Instructions

Watching the TV



If no picture appears when you depress ⏻ on the TV and if the standby indicator on the TV is lit, the TV is in standby mode. Press ○ or one of the number buttons to switch it on.

This section explains the basic functions you use while watching the TV. Most operations are done using the Remote Commander.

Switching the TV on and off

Switching on

Depress ⏻ on the TV.

Switching off temporarily

Press ⏻ on the Remote Commander.
The TV enters standby mode and the standby indicator on the front of the TV lights up in red.

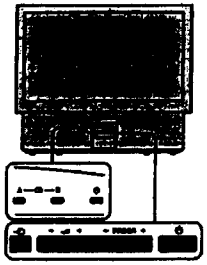
To switch on again

Press ○, PROGR +/–, or one of the number buttons on the Remote Commander.

Switching off completely

Depress ⏻ on the TV and the indicator on the front of the TV lights up in amber.

To save energy, we recommend you switch off your TV completely when the TV is not in use.



Selecting TV Programmes

Press PROGR +/– or press the number buttons.

To select a double-digit number

Press –/--, then the numbers.
For example, if you want to choose 23, press –/--, 2 and 3.

Adjusting the Volume

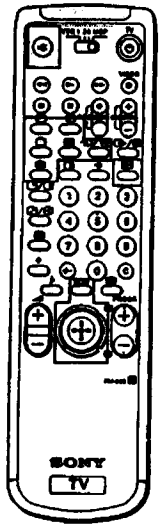
Press +/–.

Operating the TV Using the Buttons on the TV

To select the programme number, press the PROGR +/– buttons.
To adjust the volume, press the +/– buttons.
To select the video input picture, press the ⇥ button.
To reset picture and sound controls to the factory preset level (Reset function), press PROGR +/– buttons simultaneously.

For details of the teletext operation, refer to page 19.

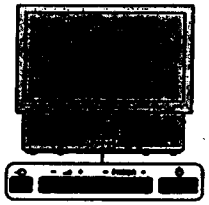
For details of the video input picture, refer to page 24.



Watching Teletext or Video Input

Watching teletext

1 Press ▤ to view the teletext.
2 For teletext operation, enter a 3-digit page number with the number buttons to select a page.
For fastext operation, push the joystick to the colour mark which corresponds to the colour-coded menu.
For both operations, press ▤ (PAGE +) for the next page or ▤ (PAGE –) for the preceding page.
3 To go back to the normal TV picture, press ○.



Watching a video input picture

1 Press ⇥ repeatedly until the desired video input appears.
2 To go back to the normal TV picture, press ○.

More Convenient Functions

Displaying the on screen indications

Press ⊞ to display the indications.
Press again to make the indications disappear.

Muting the sound

Press ✕.
To resume normal sound, press ✕ again.

Displaying the time

Press ⊞. This function is available only when teletext is broadcast.
To make the time display disappear, press ⊞ again.

Displaying the Programme Table

Push the joystick to blue or green to select a programme, then press the joystick to confirm. A Programme Table will be displayed on the left side of the TV screen.
To make the Programme Table disappear, press MENU.

Freezing the picture

When watching the TV you can "freeze" the picture. Press ⊞.
Press the button again to return to the normal TV picture.

Changing the screen format

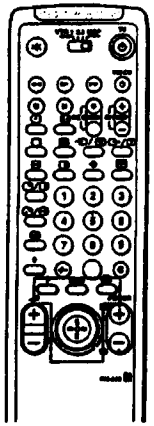
Press ⊞ repeatedly to change the Screen mode as follows:
4:3 (4:3 picture)
➡ 14 : 9 (for 14 : 9 laser discs)
➡ Zoom (16:9 for movies broadcast in the cinemascopic format)
➡ Wide (for 16:9 broadcasts)
➡ Auto Wide (automatic selection of the optimum screen ratio)
➡ Smart (imitation of 16:9 for 4:3 broadcasts)
See also page 18 for more information.

GB

Adjusting and Setting the TV Using the Menu

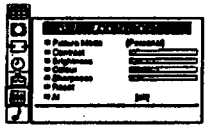
PICTURE CONTROL

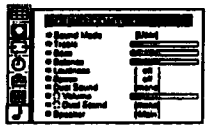
SOUND CONTROL



Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste. You can also select dual sound (bilingual) programmes when available or adjust the sound for listening with the headphones.





1 Press ● (for picture) or ♪ (for sound) on the Remote Commander.

or

Press MENU and select the symbol ▣ for Picture Control or ♪ Sound Control. Push to yellow to confirm.
The PICTURE CONTROL or SOUND CONTROL menu appears.

2 Push the joystick to blue or green to select the desired item. Push to yellow to confirm.
The selected item changes its colour.

3 Push to red or yellow to adjust the selected item. Press the joystick to confirm.
For the effect of each control, see the table below.

4 Repeat steps 2 and 3 to adjust other items.

5 Press MENU to restore the normal TV picture.

Effect of each control

PICTURE CONTROL	Effect
Picture Mode	Personal → Economy (energy saving setting) ↓ Live ← Sports ← Movie ← Game ↑
Contrast	Less ——+—— More
Brightness	Darker ——+—— Brighter
Colour	Less ——+—— More
Hue	Greenish ——+—— Reddish
Sharpness	Softer ——+—— Sharper
Reset	Resets picture to the factory preset levels.
AI	Off: normal On: automatic optimization of contrast level according to TV signal

Notes
- HUE is available for NTSC colour systems only.
- Brightness, Colour and Sharpness are available, only if "Personal" or "Economy" is selected in "Picture Mode".
- Treble, Bass and Loudness are available, only if "User" is selected in "Sound Mode".

Note on LINE OUT
The dual sound mode output from the G- jack on the rear correspond to the Headphones Dual Sound settings.

When watching a video input source with stereo sound
You can select Dual Sound to change the sound.

SOUND CONTROL	Effect
Sound Mode	Choice between different sound effects User ↔ Pop ↔ Jazz ↔ Rock ↑
Treble	Less ——+—— More
Bass	Less ——+—— More
Balance	More left ——+—— More right
Loudness	Off: normal On: for music broadcasts
Space	Off: normal On: special acoustic effect
Dual Sound	A: left channel B: right channel Stereo → Mono The selected mode of the A-CD-B indicator on the TV lights up.
Headphones: ∩ Volume ∩ Dual Sound	Less ——+—— More A: channel 1 → B: channel 2 Stereo → Mono
Speaker	Main: sound from TV set Centre in: sound from external amplifier

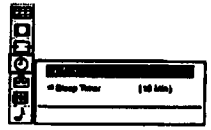
TIMER

To switch off the timer
Select "off" in step 3.

To check the remaining time
Press ⊡.

To go back to the normal TV picture
Press MENU.

Using the Sleep Timer



You can select a time period after which the TV automatically switches into standby mode.

1 Press MENU.

2 Push the joystick to blue or green to select the symbol ⏲ on the menu screen. Push to yellow to confirm.

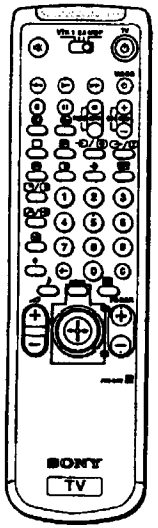
3 Push to yellow. Push to blue or green to select the time.

The time period (in minutes) changes as follows:

off ↔ 10 ↔ 20 ↔ 30 ↔ 40 ↔ 50 ↔ 60 ↔ 70 ↔ 80 ↔ 90 ↑

4 After selecting the time period, press the joystick to confirm.

One minute before the TV switches into standby mode, a message is displayed on the screen.



When you want to select the screen mode
You can also select the screen mode by pressing the ⊞ button on the Remote Commander.

To restore the normal TV picture
Press MENU.

Operating Screen Mode

Using the Screen Mode menu, you can change the aspect ratio for the TV display for wide screen effects.

1 Press MENU to display the main menu.
2 Push the joystick to blue or green to select the symbol ◻ on the menu screen. Push to yellow to confirm.
The SCREEN MODE menu appears.
3 Push to blue or green to select "Screen Mode". Push to yellow to confirm.
The Screen Mode menu appears.

You have the following options:
4:3 for normal ratio 4:3 ⓐ
Smart: imitation of wide screen effect (16:9) for 4:3 broadcasts ⓑ
Zoom imitation of wide screen effect (16:9) for movies broadcast in cinemascopic format ⓒ
Wide: for 16:9 broadcasts ⓓ
14:9 for 14:9 laser discs ⓔ
Auto Wide: automatic selection of the optimum screen ratio (e. g. 4:3 picture automatically changes to Smart mode, 16:9 picture changes to Zoom mode).
Press the joystick to confirm the selection.

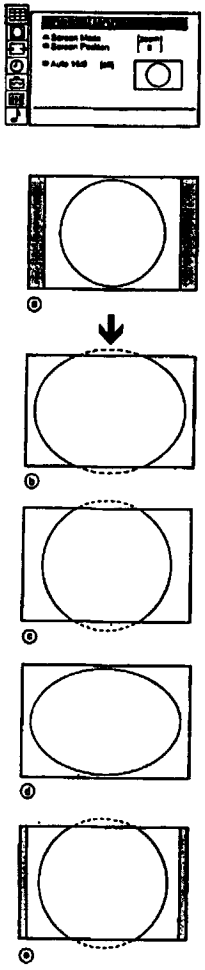
Changing the screen position (for Zoom/Auto Wide modes)

When using the Zoom mode and 14:9 mode, part of the picture at the top and bottom will be cut off. With the help of the function "Screen position", you can move the screen up or down in order to see the cut-off part of the screen (e.g., to read the subtitles).
Push the joystick to blue or green to select "Screen Position".
Push to yellow to confirm.
Push to blue or green to adjust the screen Position (Zoom: –7 to +7, 14:9: –4 to +4, Auto Wide: –5 to +5). Press the joystick to confirm.

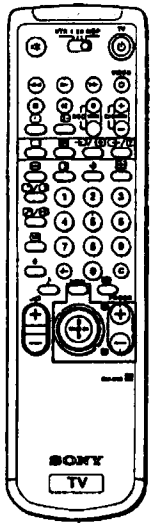
Auto 16:9

Set Auto 16:9 to "on" for automatic selection of format or PAL plus for PAL plus broadcasts, or "off" for normal mode.

1 Press MENU.
2 Push the joystick to blue or green to select the symbol ◻ on the menu screen.
Push to yellow to confirm.
The SCREEN MODE menu appears.
3 Push joystick to blue or green to select "Screen Mode".
Push to yellow to confirm.
4 Push joystick to blue or green to select "Auto 16:9".
Push to yellow to confirm.
5 Push joystick to blue or green to select "on" or "off".
Press the joystick to confirm.



Teletext



Note
Teletext errors may occur if the broadcasting signals are weak.

TV stations broadcast an information service called Teletext via the TV channels. Teletext service allows you to receive various information pages such as weather reports or news at any time you want.

Direct Access Functions

Switching Teletext on and off

1 Select the TV channel which carries the teletext broadcast you want to watch.
2 Press ▣ to switch on teletext.
A teletext page will be displayed (usually the index page).
If there is no teletext broadcast, "No text available" is displayed on the information line at the top of the screen.

To switch teletext off
Press ▢.

Selecting a teletext page

With direct page selection
Use the number buttons to input the three digits of the chosen page number.
If you have made a mistake, type in any three digits. Then re-enter the correct page number.

With page-catching
1 Select a teletext page with a page overview (e.g. index page).
2 Press the joystick.
"Page Catching" is displayed at the top of the page.
3 Push joystick to blue or green to select the page you want. Press the joystick to confirm.
The requested page will appear in a few seconds.
Press ▣ to resume normal teletext reception.

GB

Accessing next or preceding page

Press ⊕ (PAGE+) or ⊖ (PAGE–).
The next or preceding page appears.

Superimposing the teletext display on the TV programme

- Press ⓣ once to get Teletext only.
- Press ⓣ twice for Mix mode.

The normal TV screen and the Teletext screen are overlapped.

Preventing a teletext page from being updated

- Press ⓘ.
  The symbol "ⓘ" is displayed on the information line.
- Press ⓣ to resume normal teletext reception.

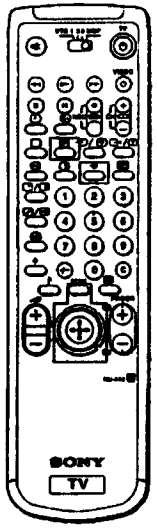
Revealing hidden information (e.g. for a quiz)

Sometimes pages contain concealed information, such as answers to a quiz. The reveal option lets you disclose the information.
Press ⓡ. Press again to cancel.
Press ⓣ to resume normal teletext reception.

Using Fastext

With Fastext you can access pages with one key stroke.
When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue positions on the Remote Commander.
Push the joystick to the colour mark which corresponds to the colour-coded menu. The page will be displayed after a few seconds.

Note
Fastext operation is possible, only when the TV station broadcasts Fastext signals.



Note
Some of the features may not be available depending on the teletext service.

Using the Teletext Menu

This TV is provided with a menu-guided teletext system. When teletext is switched on, you can use the menu buttons to operate the teletext menu. Select the teletext menu functions in the following way:

1 Press MENU.
The menu will be superimposed on the teletext display.

2 Push the joystick to blue or green to select the teletext function you want. Push to yellow to confirm the selection.

USER PAGES/PRESET USER PAGES

See page 22 for information about presetting and operating the user pages.

INDEX

The index will give you an overview of the contents of the teletext and the page numbers.

TOP/BOTTOM/FULL

For convenient reading of a teletext page, you can enlarge the teletext display with the ability to scroll up and down. After having selected the function, an information line Top/Bottom/Full will be displayed.
Push the joystick to green to enlarge the upper half, push to blue to enlarge the lower half. Press the joystick to resume the normal display.
Press ⓣ to resume normal teletext reception.

TEXT CLEAR

After selecting the function, you can watch a TV programme while waiting for a teletext page to be captured. (The symbol changes its colour.)
Press ⓣ to resume normal teletext reception.

SUBTITLES

Your teletext service will inform you if a TV programme is subtitled. After having selected the function, the subtitles will be displayed.

TIME PAGE

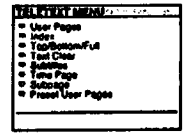
Your teletext service will inform you, if a time coded page is available. You can have a page (e.g., an alarm page) displayed at a certain time.

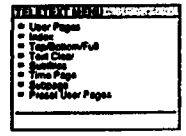
1 Select the Time Page in the teletext menu.
Push the joystick to yellow.
An information window is displayed. Push to blue or green to select "On". Push to yellow.

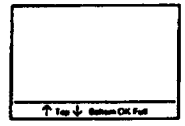
2 Use the number buttons to enter the three digits of the page you want (e.g. 301). Push to yellow after each digit.

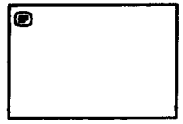
3 Use the number buttons to enter the four digits of the desired time (e.g. 18-54). Push to yellow after each digit. Press joystick to confirm.

4 Press MENU.
The time is displayed in the top left-hand corner of the screen.
At the requested time the page is displayed.
Press ⓣ to resume normal teletext mode.









GB

To cancel the request
Push the joystick to red and then to yellow.

If two broadcasting stations use the same Teletext
You can preset one bank to 2 different programme positions.

SUBPAGE

You may want to select a particular teletext page from several subpages which are rotated automatically. After having selected the function, an information line will be displayed.

To select the desired subpage, enter four digits using PROGR +/– or the number buttons (e.g., enter 0002 for the second page of a sequence).

User Page Bank System

You can store up to 30 pages in the "Teletext page bank system". In this way you have quick access to the pages you watch frequently.

Storing pages

There are 5 "banks" (A to E) for 5 teletext stations. In each bank you can store 6 preferred pages (P1 to P6).

1 Press ⓣ (if Teletext is not on already) and MENU so that the TELETEXT MENU display appears.

2 Push the joystick to blue or green to select "Preset User Pages". Push to yellow to confirm.

3 Push to blue or green to select the bank (from A to E) you want. Push to yellow to confirm.
The cursor will go to the first position (P1) of the preferred pages.

4 Push to blue or green to select the three digits of your first favourite page. Push to yellow after each digit. Push to yellow to confirm.
The cursor will go to the second position.

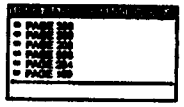
5 Repeat step 4 for the other 5 favourite pages. If you do not want to preset all 6 page numbers, push to yellow without inserting any number. After finishing the presetting, press the joystick.

6 Push to blue or green to select "Allocate Bank". Push to yellow to confirm.

7 Push to blue or green to select the programme position of the channel which carries the teletext service for which you have selected your favourite pages. Push to yellow to confirm.

8 Push to blue or green to select the bank from step 3. Press the joystick to confirm.

9 Repeat steps 3 to 8 for other 4 banks available.



Displaying User Pages

1 Press MENU.

2 Push the joystick to blue or green to select "Preset User Pages". Push to yellow to confirm.
A table of the stored preferred pages will be displayed.

3 Push to blue or green to select the page you want. Press the joystick.
The page is displayed after some seconds.

or

1 Press ◆.

2 Push joystick to blue or green to select the page you want. Press the joystick.

Connecting and Operating Optional Equipment

Connecting Optional Equipment

You can connect optional audio-video equipment to this TV such as a VCR, video disc player, and stereo system.

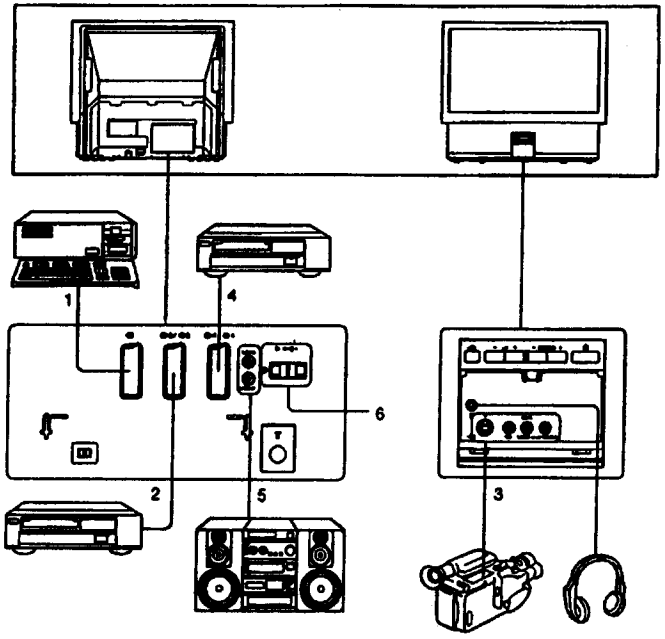
GB

To connect a VCR using the 'T' terminal
Connect the aerial output of the VCR to the aerial terminal 'T' of the TV.
We recommend that you tune in the video signal to programme number "0".
For details, see "Presetting Channels Manually" on page 9.

If the picture or the sound is distorted
Move the VCR away from the TV.

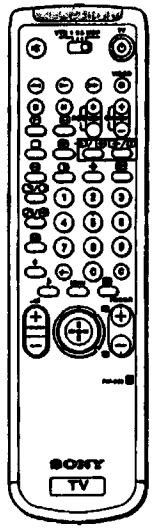
S/video input (Y/C input)
Video signals can be separated into Y (luminance or brightness) and C (chrominance) signals.
Separating the Y and C signals prevents them from interfering with one another, therefore it improves picture quality (especially luminance).
This TV is equipped with 3 S Video input jacks, through which these separated signals can be input directly.

When connecting a monaural VCR
Connect only the white (G) jack to both the TV and VCR.



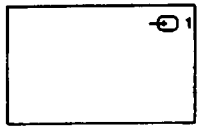
Acceptable input signal		Available output signal
1	Normal audio/video and RGB signal	Video/audio from TV tuner
2	Normal audio/video and S video signal	Video/audio from selected source
3	Normal audio/video and S video signal	No outputs
4	Normal audio/video and S video signal	Video/audio displayed on TV screen (monitor out)
5	No inputs	Audio signal
6	Centre speaker input Set "Speaker" on the SOUND CONTROL menu to "Main" or "Centre in".	No outputs

Selecting Input with PROGR +/– or number buttons
You can preset video input sources to the programme positions so that you can select them with PROGR +/– or number buttons. For details, see "Presetting Channels Manually" on page 9.



Selecting Input and Output

This section explains how to view the video input picture (of the video source connected to your TV), and how to select the output signal using direct access buttons or the menu system.



Selecting Input

Press ⇦ repeatedly to select the input source.
The symbol of the selected input source will appear.

To go back to the normal TV picture

Press ▢.

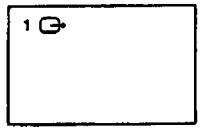
Input modes

Symbol	Input signal
⇦1	Audio/video input through the ⇦ 1 connector
⇦	Audio/RGB input through the ⇦ 1 connector
⇦2	Audio/video input through the ⇨ 2/ ⇦ 2 connector
⇦2	Audio/S video input through the ⇨ 2/ ⇦ 2
⇦3	Audio/video input through ⇦ 3 and ⇦ 3 connector on the front
⇦3	S video input through the ⇦ 3 connector (4-pin connector) on the front
⇦4	Audio/video input through the ⇨ 4/ ⇦ 4 connector
⇦4	S video input through the ⇨ 4 / ⇦ 4

You can also select the input mode using the ⇦ button on the TV.

Selecting the output

The ⇨ 2 / ⇦ 2 connector outputs the source input from the other connectors.



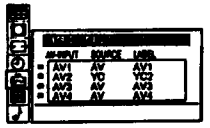
Press ⇨ repeatedly to select the output.

The symbol of the selected output source appears.

Output modes

Symbol	⇨ 2/ ⇦ 2 connector outputs
1 ⇨	Audio/video signal from the ⇦ 1 connector
2 ⇨	Audio/video signal from the ⇨ 2/ ⇦ connector
3 ⇨	Audio/video signal from the ⇦ 3, ⇦ 3 connectors
4 ⇨	Audio/video signal from the ⇨ 4/ ⇦ 4 connector
TV⇨	Audio/video signal from the 'I' aerial terminal

Using AV Preset



GB

Using this function you can preset the desired input source (e.g. ⇦ 1, RGB signal) to the respective AV input (AV 1 ⇦). In this way, a connected VCR will automatically switch to the RGB signal.

1 Press MENU.

2 Push the joystick to blue or green to select the symbol 🖃 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select "Installation". Push to yellow. Push to blue or green to select "AV Preset". Push to yellow to confirm. The AV PRESET menu appears.

4 Push to blue or green to select the desired AV input. Push to yellow to confirm.

5 Push to blue or green to select the desired source. Push to yellow to confirm. For the respective AV inputs you have the following choice:

AV1: RGB or AV AV3: YC3 or AV
AV2: YC2 or AV AV4: YC4 or AV

6 To label a source: Push to blue or green to select the first character (letter or number, "-" for a blank). Push to yellow to confirm. Select the other four characters in the same way.

7 For automatic format and PAL plus selection (Auto 16:9): Push to blue or green to select "on" for the AV input.

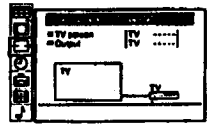
8 Press the joystick to store.

9 Repeat steps 4 to 8 for other AV inputs.

10 For RGB input source only: Push to blue or green to select RGB H centre.
- Push to yellow to confirm.
- Push to blue or green to adjust the centre of the picture in a range of –5 to +5. Press the joystick to store.
- Repeat step 10 to adjust RGB H Size.

11 Press MENU to restore the normal TV picture.

Checking and selecting the input and output sources using the menu



You can display the menu to see which input sources are selected for the TV screen, as well as which output source is selected. You can also select them on the menu display.

1 Press MENU.

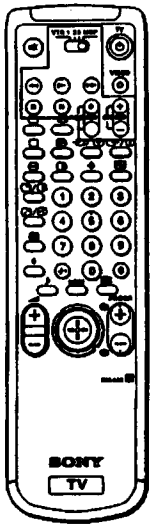
2 Push the joystick to blue or green to select the symbol ⇨ on the menu screen. Push to yellow to confirm.
The VIDEO CONNECTION menu appears.
You can see which source is selected for the TV and for the output. If you want to select the input and output on this menu, go on to the next step.

3 Push to blue or green to select "TV screen" (input source for TV-screen), or "Output" (output source for ⇨ 2/⇦ 2).
Push to yellow to confirm.

4 Push to blue or green to select the desired source. Press joystick to store.
For details about each source, see the table on page 24.

5 Repeat steps 3 to 4 to select the source for other inputs or outputs.

6 Press MENU to restore the normal TV picture.



When recording
When you use the ● (record) button, make sure to press this button and the one to the right of it simultaneously.

Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most of Sony remote-controlled video equipment: beta, 8 mm and VHS VCRs and video disc players.

Tuning the Remote Commander to the equipment

1 Set the VTR 1/2/3 MDP selector according to the equipment you want to control:

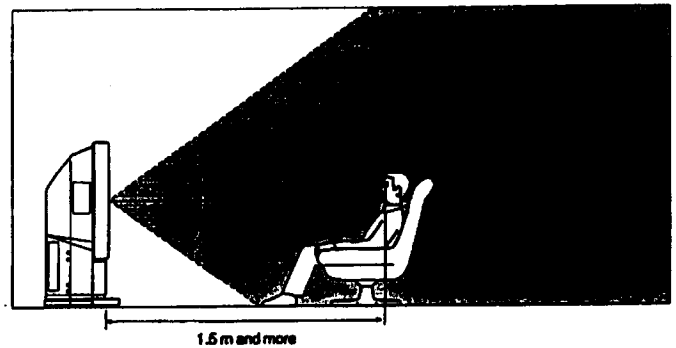
VTR1: Beta VCR
VTR2: 8 mm VCR
VTR3: VHS VCR
MDP: Video disc player

2 Use the buttons indicated in the illustration to operate the additional equipment.
If your video equipment is furnished with a COMMAND MODE selector, set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.
If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

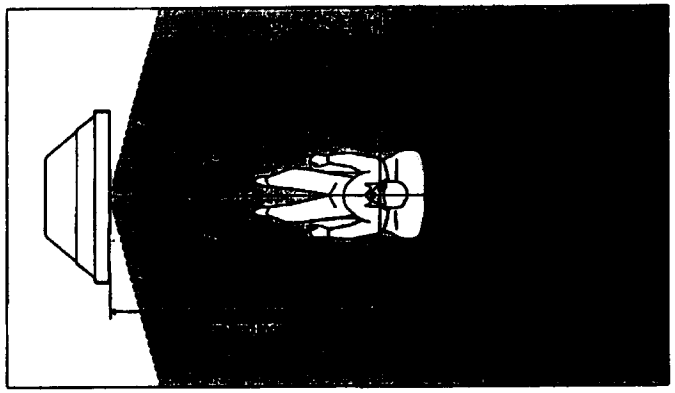
Optimum Viewing Area

For the best picture quality, try to position the projection TV so that you can view the screen from within the areas shown below.

Horizontal viewing area



Vertical viewing area



Cleaning the Air Filter

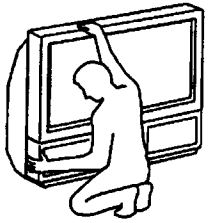
Periodic cleaning of the air filter is necessary. Clean the air filter once a month. When the filter becomes old and dust remains on the filter even after cleaning, replace it with a new one.

If you do not take the following precautions, you may get hurt or household belongings may be damaged.

- Clean the air filter periodically. If you don't clean it, it may cause internal heat build-up.
- Never use an air filter which is torn or has holes. Attach the filter firmly with six tabs. If dust enters the TV, the picture may become dark or it may cause fire.

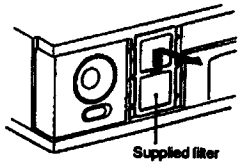
1 Turn off the power and disconnect the power cord.

2 Remove the front panel.

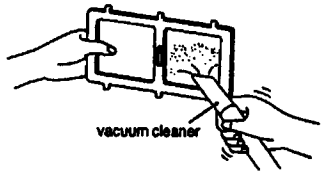


Remove the front panel without moving the TV. Grasping the sides of the front panel with your fingers, pull the panel forward. Be careful not to catch your fingernails.

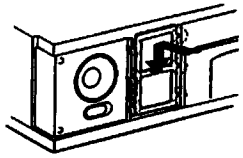
3 Pull the filter upward and remove it.



4 Clean the dust with a vacuum cleaner.



5 Attach the filter.
Attach the six tabs securely.



6 Attach the front panel.
Be careful not to damage the speaker.

Notes

- Attach the filter firmly. If it is not firmly attached, the power will not turn on.
- Consult your nearest Sony service centre to obtain a new filter.

Replacing the Lamp

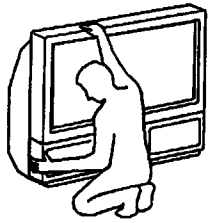
The lamp life is about 6000 hours. When the lamp becomes dark or the picture colour is not normal, replace the lamp with a new one.

If you do not take the following precautions, you may get hurt or household belongings may be damaged.

- Use the supplied new lamp for replacement. If you use another lamp, it may cause damage to the TV.
- Do not remove the lamp except when replacing it. This may cause heat damage or fire.
- Before replacing the lamp, turn off the power and disconnect the power cord.
- Replace the lamp after it becomes cool. The front glass of the lamp remains 100 °C (212 °F) and more even 30 minutes after the power is turned off.
- Do not place the removed lamp in proximity to children or flammable material.
- Do not get the removed lamp wet, or insert objects inside the lamp. It may cause the lamp to explode.
- Do not place near metal or easily flammable objects, as this may cause fire. Also, do not put your hand inside the lamp compartment, as you may be burned.
- Attach the new lamp firmly. If it is not firmly attached, the picture may become dark or fire may result.

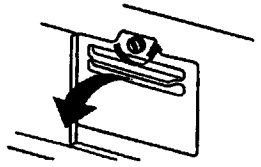
1 Turn off the power and disconnect the power cord.
Replace the lamp 30 minutes or more after the power is turned off.
Prepare the new lamp.

2 Remove the front panel.

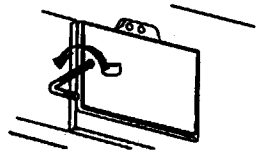


Remove the front panel without moving the TV. Grasping the side of the front panel with your fingers, pull the panel forward. Be careful not to catch your fingernails.

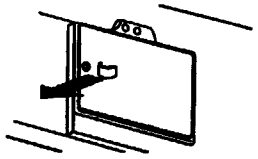
3 Loosen the screw with the object such as a coin and remove the lamp cover.



4 Loosen the screw and pull out the lamp.
The lamp is still very hot just after the power is turned off. Be careful not to touch the front glass or surrounding area of the lamp or the glass of the lamp compartment.



Loosen the screw with the supplied wrench.



Pull out the lamp by the handle.

5 Attach the new lamp.
Fasten the screw tightly.

6 Attach the lamp cover.
Fasten the screw tightly.

7 Attach the front panel.
Be careful not to damage the speaker.

When the ⏻ indicator on the front panel flashes

The lamp is damaged, replace it with a new one.

Notes

- Do not touch or stain the front glass of the new lamp or the glass of the lamp compartment. If the glass becomes dirty, the picture quality may deteriorate or the lamp life may be shortened.
- Attach the lamp cover firmly. If it is not firmly attached, the power will not turn on.
- When the lamp burns out, a noise is audible. This does not represent a damage.
- Consult your nearest Sony service centre to obtain a new lamp.

GB

Troubleshooting

Here are some simple solutions to some problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark), no sound	• Plug in the TV in. • Press ⏻ on the TV (if ⏻ indicator is on, press 🖵 or a programme number on the Remote Commander). • Check the aerial connection. • Check if the selected video source is on.
Poor or no picture (screen is dark), but sound is OK	• Press ● to enter the PICTURE CONTROL menu and adjust the brightness, contrast and colour.
Poor picture quality when watching an RGB video source	• Press -⦵ repeatedly to select -⊖.
Good picture but no sound	• Press 🔊+. • Check loudspeakers connection. • If 🔇 is displayed on the screen, press 🔇.
No colour for colour programmes	• Press ● to enter the PICTURE CONTROL menu, select Reset, then press the joystick to confirm.
Remote Commander does not function	• The batteries are weak.

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

Specifications

This product complies with the EU Directive 89/336/EEC.

Television system	B/G/H, D/K, I, L
Colour system	PAL/SECAM NTSC 3.58/4.43 (VIDEO IN)
Channel coverage	See "Receivable channels and channel displays" at the bottom.
Projected picture size	40 inches Approx. 101.6 cm measured diagonally
Terminals	
Rear	Center speaker input terminals, 2 terminals ⦵ (L, R), audio outputs - phono jacks -⊖ 1, 21-pin Euro connector (CENELEC standard) - inputs for audio and video signals - inputs for RGB - outputs of TV audio and video signals ⦵/-⊖ 2, 21-pin Euro connector - inputs for audio and video signals - inputs for S video - outputs for audio and video signals (slectable) ⦵/-⊖ 4, 21-pin Euro connector - inputs for audio and video signals - inputs for S video - outputs for audio and video signals (monitor out)
Front	-⊖ 3, S video inputs - 4-pin DIN -⊖ 3, video inputs - phono jacks -⊖ (L, R), audio inputs - phono jacks 🎧, headphones jack - stereo minijack
Sound output	2 × 20 W (music power) 2 × 15 W (RMS) 50 W (RMS) (using as the centre speaker)
Power consumption	182 W
Dimensions (W × H × D)	980 × 834 × 399 mm (38⅝ × 32⅞ × 15¾ inches)
Mass	27 kg (59 lbs 8 oz)
Supplied accessories	See page 6.
Other features	Digital comb filter (High resolution) FASTEXT DCI (Digital Constant Image)

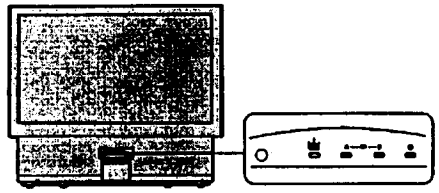
Design and specifications are subject to change without notice.

Receivable Channels and Channel Displays

	Receivable channels	Indication on the screen
B/G/H	E2..12 21..69	C02 C03 C04..C12 C21..C69
CABLE TV (1)	S1..41	S01 S02..S41
CABLE TV (2)	S01..S05 M1..M10 U1..U10	S42..S46 S01..S10 S11..S20
ITALY	A B C D E F G H H1 H2 21..69	C11..C69
D/K	R01..R12 R21..R69	C02..C12 C21..C69
CABLE TV (1)		S01 S02..S41
CABLE TV (2)		S42 S43..S46
CABLE TV	B..Q, S21..41	S02, S03..S17, S21..S41
L	F2..F10 F21..F69	C01..C12 C21..C69
I	B21..B68	C21..C68

Warning Indicators

When a problem occurs, the indicator flashes as follows.
Attempt the solution recommended for the given problem.



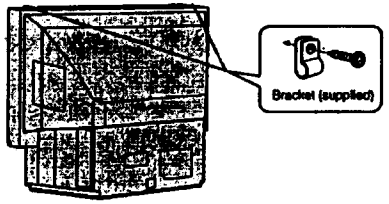
Cause	Indicator flashing patterns
The lamp does not light (when the lamp is damaged)	The 💡 indicator flashes.
The lamp does not light (when the lamp is not damaged)	The ⏻ indicator flashes twice. Flashing continues in this manner.
The cover of the filter or the lamp is removed.	The ⏻ indicator flashes three times. Flashing continues in this manner.
The fan for cooling stops.	The ⏻ indicator flashes four times. Flashing continues in this manner.

If the lamp flashes in a way not described above, consult your nearest Sony service centre.

Stabilizing the Projection TV

After setting up, secure the projection TV to a wall, etc., with the supplied brackets, for safety purposes.

1 Mount the two supplied brackets with the screws to the upper rear side of the projection TV.

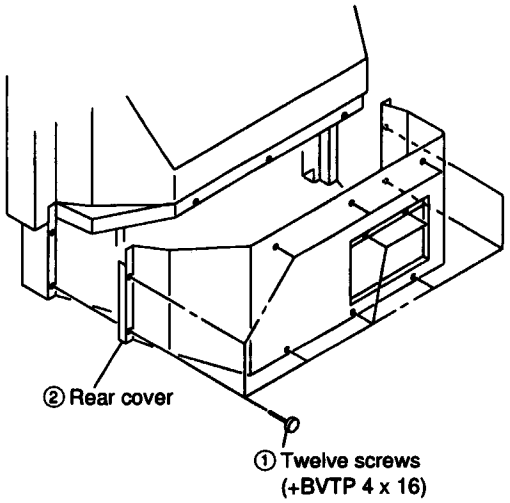


2 Pass a strong cord or a chain through each bracket mounted in 1, and then secure to a wall or a pillar, etc.

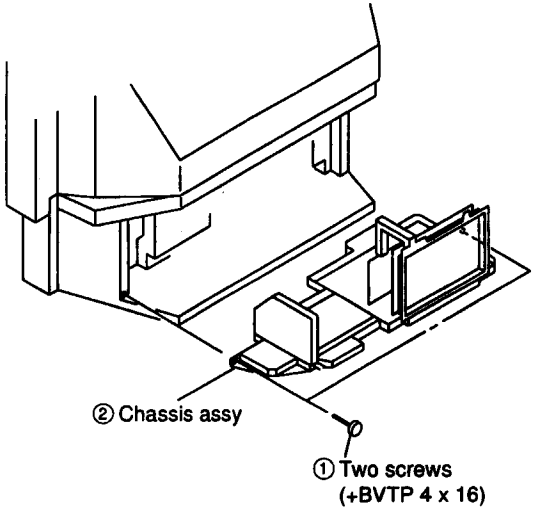
GB

SECTION 2
DISASSEMBLY

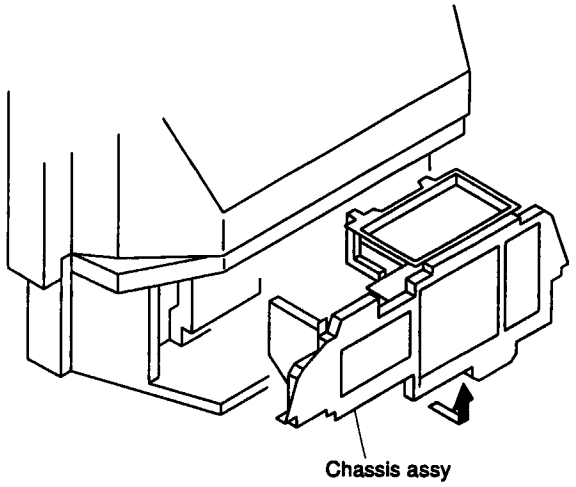
2-1. REAR COVER REMOVAL



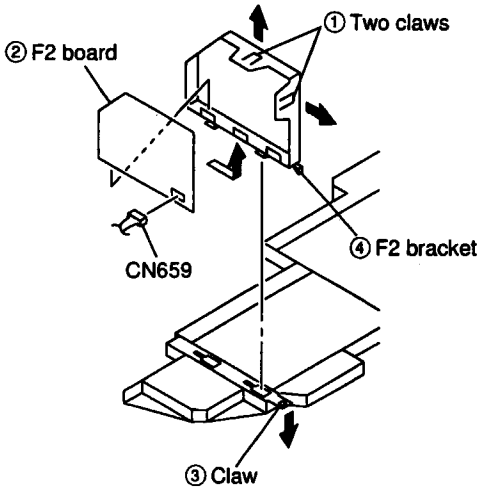
2-2. CHASSIS ASSY REMOVAL



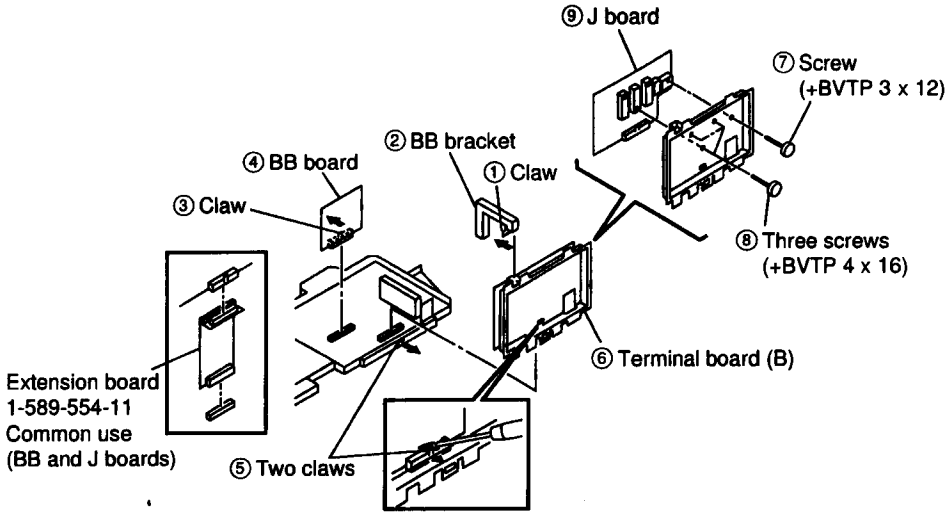
2-3. SERVICE POSITION



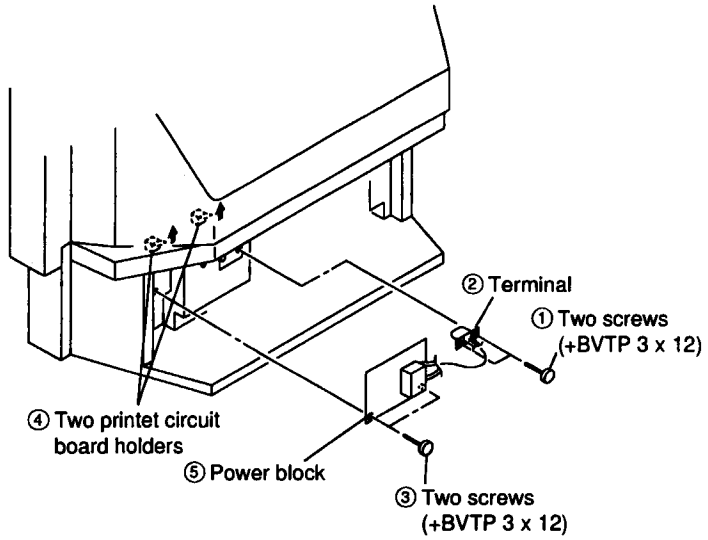
2-4. F2 BOARD AND F2 BRACKET REMOVAL



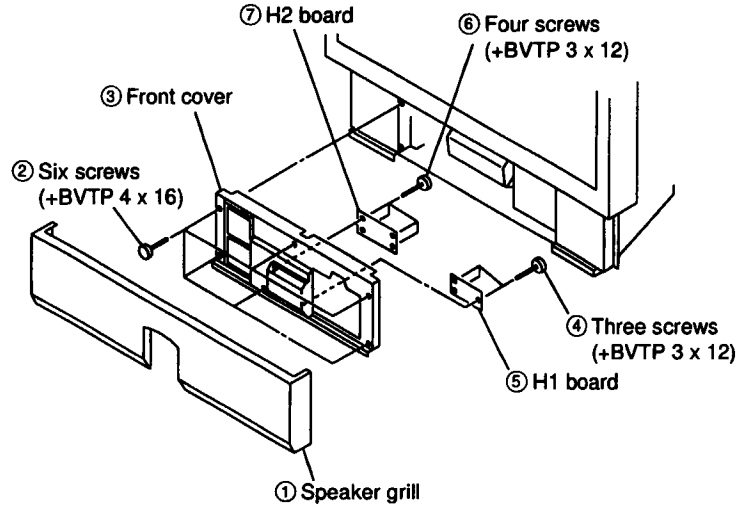
2-5. BB AND J BOARDS REMOVAL (EXTENSION BOARD)


⑨ J board
⑦ Screw (+BVTP 3 x 12)
② BB bracket
④ BB board
① Claw
③ Claw
⑧ Three screws (+BVTP 4 x 16)
⑥ Terminal board (B)
Extension board 1-589-554-11 Common use (BB and J boards)
⑤ Two claws

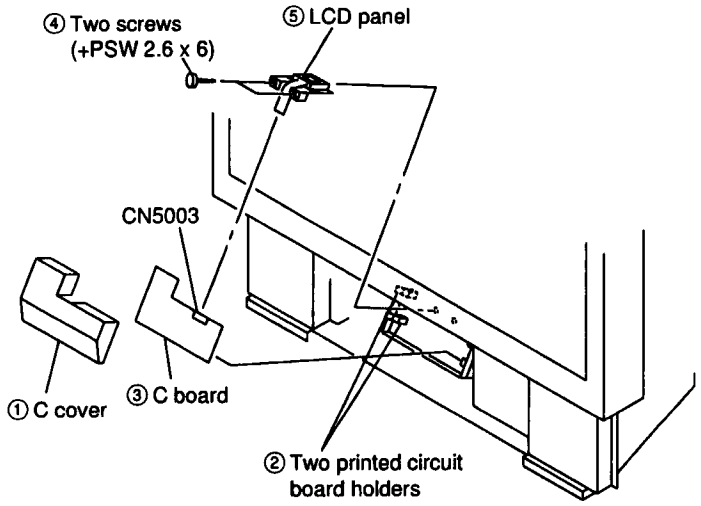
2-6. POWER BLOCK REMOVAL



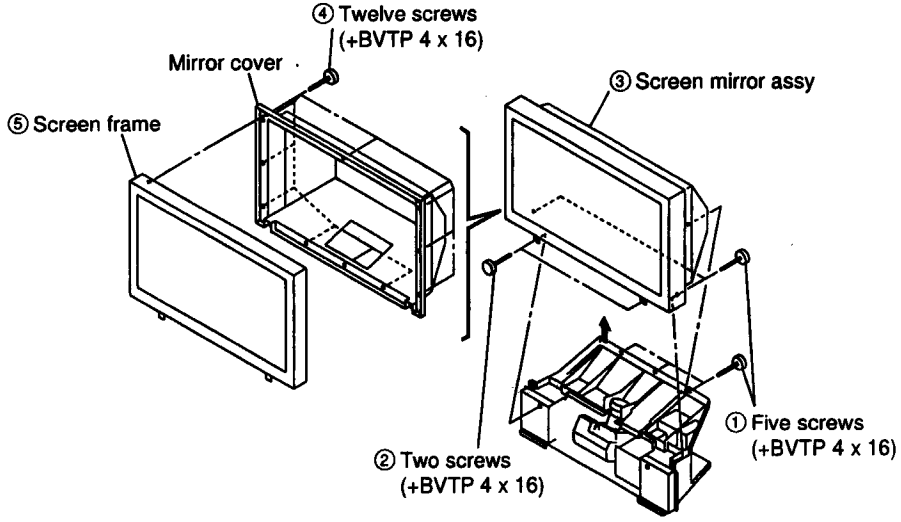
2-7. H1 AND H2 BOARDS REMOVAL



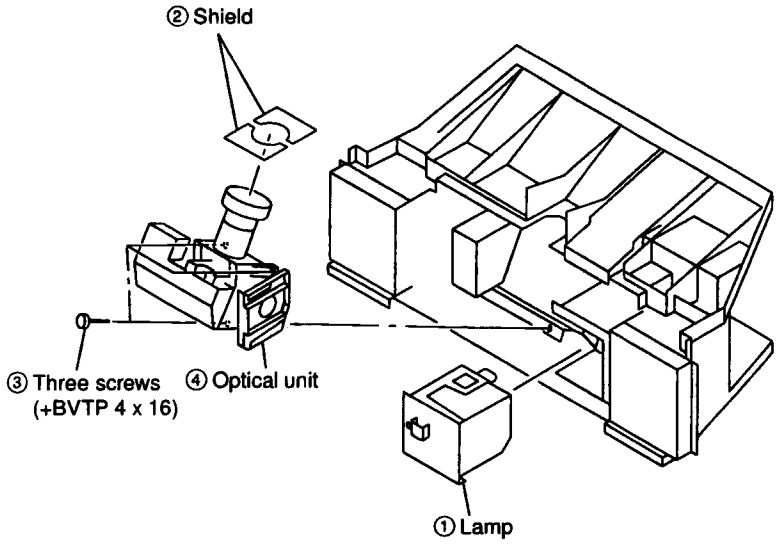
2-8. C BOARD AND LCD PANEL REMOVAL



2-9. SCREEN MIRROR ASSY REMOVAL



2-10 OPTICAL UNIT REMOVAL



SECTION 3
SELF DIAGNOSIS

When power is turned on, failure detection is proceeded.

If any of the devices listed below fails, the LED (B) will flicker as frequent as the corresponding device.

Board name	—	—	—	—	A Board
Ref. No	—	—	—	—	IC7
Device	Lamp Protection	Lamp/Filter Cover	Fan Protection	BUS Line	ST24C16 (NVM)
Flickering	1	2	3	9	10

C Board	A Board	BB Board	A Board	A Board	A Board
IC5008	IC2010	IC3003	IC4001	IC801	IC2006
ST24C04 (NVM)	TDA9143 (Chroma)	CXD2072 (MID)	CXA2101 (MCP)	MSP3410D (MSP)	SDA5273 (Megatext)
11	13	14	15	16	17

If more then two devices fail, the one assigned with less flickering frequency of LED (B) has a priority to those with more frequency.

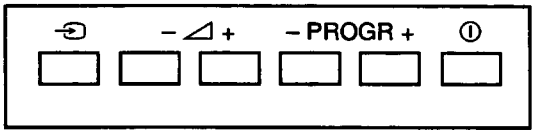
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander, RM-862.

HOT TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set while pressing the PROG + (plus) and PROG – (minus) buttons on the front panel.



2. "TT" will appear on the upper right cmer of the screen.
3. Press "MENU" on te commander to get the service menu on screen.

DEVICES	
– IO-Expander	CUT OFF
– Col Dec Main	TDA 9143
– RGB Driver	C-Board
– AI	TDA 9170
– Timing Gen.	CXD 2443
– MID 2	
– MCP	CXA 2101
– Sound	

4. Push the joystick up (green) or down (blue) on the remote commander to select the adjustment item.
5. Press the center button to proceed to the next menu.
6. If the adjustment item is 'Video Proc.', push the down button to move to "Video Proc.'.
7. The Menu as indicated in Fig. will appear on the screen.
8. Move the joystick up or down to move to the adjustment item and press the center (OK) button.
9. Change the data in order to comply with each standard.

IO-Expander CUT OFF

Item No.	Adjustment Item	Data Amount
1	R Cut off	255
2	G Cut off	255
3	B Cut off	255

TDA9143

Item No.	Adjustment Item	Data Amount
1	SOURCE	2
2	Trap bypass	off
3	Comb filter	on
4	Loop closed	on
5	Time const	1
6	Xtal	3
7	Field frq	3
8	Outport A	off
9	Outport B	off
10	Standard	0
11	Forced RGB	off
12	Enable FS	off
13	Ext. RGB clamp	off
14	Hue	32
15	Line lock HA	on
16	Forrced window	off
17	Ext. MACP chroma	off
18	Pal+Helper demod	off
19	Pal+Helper blank	0
20	Lumi to Helper delay	0
21	Blanked sync on Yout	off
22	Baseband delay bypass	off
23	Low power Standby	off
24	Macrovision gating	on
25	Lumi delay control	12

RGB DRIVER (CXA1853, C BOARD)

Item No.	Adjustment Item	Data Amount
1	RGB GAIN	128
2	RGB BIAS	128
3	R GAIN	128
4	B GAIN	128
5	R BIAS	128
6	B BIAS	128
7	RGBrGAIN1	255
8	RGBrCTR1	255
9	RrGAIN1	128
10	BrGAIN1	128
11	RrCRT1	128
12	BrCRT1	128
13	RGBrGAIN2	0
14	RGBrCRT2	0
15	RrGAIN2	128
16	BrGAIN2	128
17	RrCRT2	128
18	BrCRT2	128
19	V COM	128
20	BRT	128
21	G1	off

TDA9170

Item No.	Adjustment Item	Data Amount
1	Sleep mode	on
2	Amplitude selection	on
3	Window selection	0
4	Black offset enable	on
5	User variable gamma	3
6	Adaptive gamma	32
7	Non-linear ampl.	11
8	Line start	0
9	Line stop	0
10	Field start	0
11	Field stop	0

CXD2443

Item No.	Adjustment Item	Data Amount
1	H-Pos	127
2	V-Pos	7
3	SH-Pos	4
4	XCLP-Pos	1
5	PCG-Pos	3
6	VWA Up-Pos	0000h
7	VWA Down-Pos	0001h
8	2H Scan	on
9	PAL Line Conv	on
10	Scan Direct H	off
11	Scan Direct V	off
12	SLFR	on
13	HPOL	off
14	VPOL	off
15	SL3B	on
16	SLEG	on
17	SLVWB	on
18	NT-PAL	off
19	XWID	off
20	HD	on
21	SNSL	on

MID2 (CXD2072Q)

PAL 50 Hz SMARTMODE

Item No.	Adjustment Item	Data Amount
1	H Size	180
2	H Pos	49
3	V Size	0
4	V Pos	27
5	HYLA	0
6	HCLA	0
7	VSCA	on
8	VPCA	off
9	HSEL	off
10	MDA	on
11	H Phase	37
12	V Phase	6
13	WONA	off
14	LBOXA	off
15	INSA	0
16	PTA	off
17	OSCA	on
18	WKCA	off
19	IPHA	off
20	IPVA	off
21	OSVA	on
22	WRTA	off
23	PLLA	off
24	DELAYA	4
25	INTLA	0
26	XINTA	off
27	DINPC	off
28	XDIN	off
29	ASPMD	5
30	OUTSG	3
31	BTEST	off
32	PLL1	1
33	CRY	1
34	HVSW	2
35	BKGC	0
36	YSDY	1
37	DELAY	3
38	MEM	off
39	YUV	0
40	REF	0
41	ADSW	off
42	RRST	off
43	PLLC	off
44	VGA HS	0
45	HBLK	220
46	VBLK	50

Item No.	Adjustment Item	Data Amount
47	TIMOUT	1
48	XRFLD	off
49	FHSW	on
50	VJITTA	0
51	HSMA	off
52	VSMA	off
53	CLPDA	40
54	CLPPA	on
55	OFFSET	0

MCP (CXA2101)

Item No.	Adjustment Item	Data Amount
1	ALL BLK	on
2	R OFF	on
3	G OFF	on
4	B OFF	on
5	CBLK OFF	off
6	AKB T	off
7	BLK SW	off
8	DATEST	off
9	INPUT SEL	1
10	MAT OUT	0
11	YCBCR/MAT	off
12	HYSW	on
13	PICTURE	55
14	LIMIT LEVEL	0
15	HUE	32
16	SYSTEM (FIX H	1
17	COLOR	32
18	AGING1	off
19	AGING2	off
20	BRIGHT	32
21	YSYMSW	off
22	YM VM	off
23	SHARPNESS	44
24	R DRIVE	32
25	D COL	off
26	G DRIVE	32
27	B DRIVE	32
28	CLP MSK	0
29	R CUTOFF	32
30	ABL MODE	0
31	G CUTOFF	32
32	ABL TH	0
33	B CUTOFF	32
34	SUB BRIGHT	32
35	HSEP SEL	on
36	FIX SYNC	0
37	V TC	2
38	H WIDTH	0
39	HD TC	1
40	HS MASK	1
41	CB OFFSET1	7
42	CR OFFSET1	7
43	CB OFFSET2	7
44	CR OFFSET2	7
45	SUB CON	7
46	SUB COL	7
47	SUB HUE	7
48	CEC LEV	1
49	R-Y/R	9
50	R-Y/B	15
51	G-Y/R	0
52	G-Y/B	15
53	LRGB2 LEVEL	15
54	GAMMA	15
55	PABL LEVEL	15
56	BLK BOTTOM	0
57	SUB SHP	3
58	SHP FO	0
59	PRE/OVER	2
60	LEC LEV	1
61	VM LEV	0
62	VM DEL	0
63	DC TRAN	1
64	D PIC	2

SOUND
Menu:
Service/Sound/MSP 3400/10 ADJUSTMENTS

	Default Value
● SCART Prescale	(1Bh)
○ FM Prescale	(1Bh)
○ NICAM Prescale B/G	(35h)
○ NICAM Prescale L	(3Bh)
○ NICAM Prescale I	(61h)
○ NICAM Prescale D/K	(35h)
○ Volume SCART Ch.	(4Fh)
○ Treble-Offset	(0)
○ Bass-Offset	(+2)
○ Loudness-Offset	(+3)
○ ANA Input 1/2	(0)
○ Beeper	(off)
○ Beeper Volume	(06h)
○ HP PAP Volume-Off	(–1)

4-2. TEST MODE

Is available by pressing the Test button twice, OSD "TT" appears. The functions described below are available by pressing the two numbers. To release Test Mode 2, press 0, 10, 20...twice or switch the TV into Standby Mode. Pressing the two Local Control buttons (+ and –) during Power ON will also switch into "TT" mode.
In TT mode, it is possible to remove the Menu from the screen by pressing the Speaker Off button once. Pressing the Speaker OFF button a second time will cause the menu to reappear. The Function is kept even when the menu is not displayed!!

00	Switch back to normal mode - TT mode off
01	Switch service menu on
02	no function
03	Set Volume to 30 %
04	Service Menu in "Service Mode"
05	Service Menu in "Production Mode"
06	Set Volume to 80 %
07	Aging mode
08	Shipping condition (Production request) To ensure that all TV sets leave the Production with the same pressettings. Programme 1 is selected, AV IN is set to AV1, AV Out is set to TV Out, Volume and HP Volume is set to 35 %, Resolution is set to high, Format is set to 4:3, Pip is set to Top Left position, Pip is switched off, TT mode is switched off, all analogue values are set to the reset setting, space Sound - Equalizer - Loudness = off, DNR off, Dig. Mode = 1, Wide Zoom Mode for W28 models, Menu Language Reset, Prog. Pointer table reset Non Interlace is allowed in Text mode.
09	Language reset. With this function the Menu Language is set to "unselected" (NVM Bank OAAH Adress ODCH). The value for the Language Group is not overwritten (Selection West/East/Common). The Language Menu appears now automatically when the TV set is switched ON as long as no new language is selected.
10	The TT number will be deleted. All numbers with 0 (10, 20 30, 40, 50, 60, 70, 80, 90) will reset the TT number. A new number can be selected. TT display is kept
11	Direct access to Balance. With Cursor Up/Down the Balance can be controlled (w/o OSD, Menu display)
12	Direct access to Hue. With Cursor Up/Down the Hue can be controlled (w/o OSD, Menu display)
13	Display of Software Version and TV set configuration
14	Production Info Display
15	Read factory setting from ROM (Program code) and store this data at Last Power Memory data location (The previous last power memory data is overwritten) AE3 has 3 packages of Analogue data: 1. Last Power memory data. This data is sent continiously to the corresponding IC's (TDA1839, SC, TDA6812) with this data the TV picture/sound appears. 2. Reset data. By pressing "Reset" in the menu this data is transfered from Reset Data location to the Last Power data location in the NVM. That means the previous Last Power Memory Data is overwritten by the Reset data last Power memory and Reset data are now the same.

15	3. Factory fixed data. In the ROM code of the micro processor are also analogue datas which are fixed (ROM can't be changed)
16	Save actual Last Power Memory data at Reset Data location (The previous Reset data is overwritten)
15/16	With these two functions, it is possible to preset user defined Reset values (just TT16) or to preset factory defined Reset values (first TT15 then TT16)
17	This functions presets the Labels for the AV sources: The Labels are AV1, RGB, AV2, YC2, AV3, YC3, AV4, YC4.
18	Text possible On/Off selection of Text (toggle function)
19	Set Volume to 50 %
20	see TT10
21	no function
22	Operating Timer and Error Monitor display
23	CXA2101 Default data setting.
24	Direct access to Sub Color. With Cursor Up/Down the Sub Color can be adjusted.
25	no function
26	Text Character set selection (Char set 06 -> West Europe)
27	Text Character set selection (Char set 38 -> East Europe)
28	Text Character set selection (Char set 40 -> West Europe) US English
29	Text Character set selection (Char set 55 -> West Europe) Turkish
30	see TT10
31	no function
32	no function
33	no function
34	no function
35	no function
36	Auto Wide Test
37	no function
38	no function
39	Reset Programme Table (NVM Bank 0ACH) The sorting of programmes in "Programme Sorting Menu" is reset.
40	see TT10
41	Picture min
42	no function
43	no function
44	no function

45	Set NVM to Protect mode (Bank 0AEH Adr. 0FFH write with 0)
46	IR Channel Pressetting Mode. The channel pressetting can be done by a Special IR transmitter (Deatiled INFO about IR transmitter from SEC) Sequence:TT46 -> --PR Number select display appears Select Prog. No from where the channel shall be stored. --> Now TV is waiting for IR sequence <-- --> If no IR transmission starts TT46 is released after 20 secs <-- INote: When TT46 is active, any transmission will be interpreted as PROG data !
47	Direct access to Headphone Source Selection with Cursor Up/Down the Source of Headphone can be selected (w/o OSD, Menu display)
48	no function
49	The EEPROM Testbyte is erased. After Power OFF -> ON the complete EEPROM data (exept channel tables) are overwritten. EEPROM Protection byte is set to 0 protection mode
50	see TT10
51	Strobo mode is activated.
52	no function
53	no function
54	no function
55	MTX Slicer Control "Low Pass" (only Sys L))
56	MTX Slicer Control "No Compensation"
57	Megatext Service Menu ON
58	MTX Small Framing Code Window
59	MTX Wide Framing Code Window
60	see TT10
61	MSP3410 DetanIt Data Settring
62	Set Balance Min
63	Set Balance Max
64	Reset all IIC Slave commands
65	Reset stored error codes in NVM.
66	Reset all
67	Direct access to Headphone Volume. With cursor Up/ Down the Headphone volume can be controlled (w/o OSD, menu display)
68	ignore errors.
69	reset ignore errors (show errors)
70	see TT10
71	Picture Rotation Function On/Off toggle.
72	no function
73	no function
74	no function
75	reserved for TT command Network ID, not inplemented yet
76	RGB DRIVER
77	no function
78	no function
79	Start Routine for colour decoder TDA9143

80	see TT10
81	no function
82	TDA9170 Detault Data Setting
83	CXD2072Q Detault Data Setting
84	no function
85	TDA9143
86	no function
87	no function
88	Text character set Russian/East
89	Text character set Russian/West
90	see TT10
91	no function
92	no function
93	CXD2443 Default Data Setting
94	no function
95	no function
96	no function
97	no function
98	no function
99	no function

4-3. REGISTRATION ADJUSTMENT

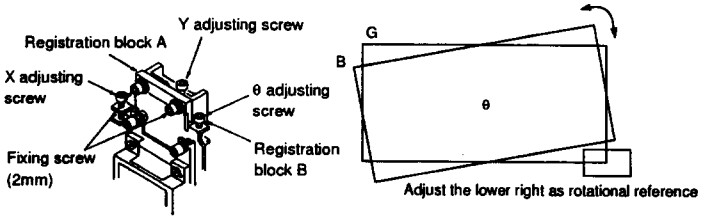
Preparation

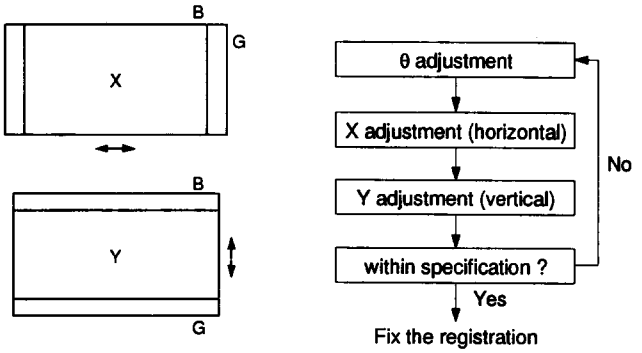
- Aspect ratio 16:9
- Image quality adjusting menu ..... Standard

Note: In adjusting the registration, the registration fixing block is secured with an adhesive, and therefore the PANEL BLOCK ASSY is required.

- Tools and Kit
  Hex. wrench keys (2 mm, 1.5 mm)
  PANEL BLOCK ASSY (Refer to SECTION 5. EXPLODED VIEWS)

1. Entering G monochrome crosshatch signal or B monochrome crosshatch signal, adjust the registration between B and G. Overlay B image on the G image as shown, while turning the registration adjusting screws in the order of θ → X → Y.
2. Enter full black signal to the B panel, then the R monochrome crosshatch signal to adjust the registration of R and G.
3. Tighten tentatively the registration fixing screws on the R and B panels, and secure the registration blocks A and B with an adhesive.
4. Tighten the registration fixing screws.





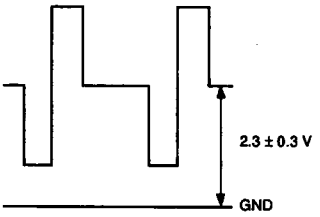
LENS FOCUS ADJUSTMENT

1. Loose screw of LENS focus.
2. Adjust LENZ focus so that best focus.

4-4. C BOARD ADJUSTMENT

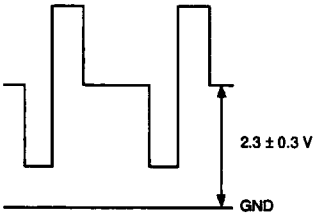
PLL fo Adjustment (L5003, L5001)

1. WIDE Mode
   1) Change to "WIDE" mode.
   2) Input to PAL color bar signal.
   3) Change "2HD" input signal CN5002 ① pin to open (no signal).
   4) Connect an osilloscope to the TP5022 (RPD2).
   5) Adjust L5003 for 2.3 ± 0.3 Vpc on the osilloscope as shown in fig.



<Fig. 1>

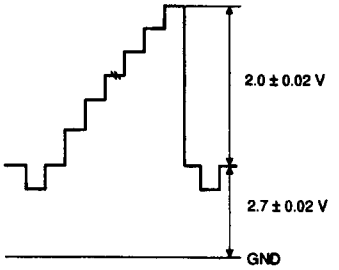
2. 4 : 3 Mode
   1) Change to "4 : 3" mode.
   2) Input to PAL color bar signal.
   3) Change "2HD" input signal CN5002 ① pin to open (no signal).
   4) Connect an osilloscope to the TP5024 (RPD1).
   5) Adjust L5001 for 2.3 ± 0.3 VDC on the osilloscope as shown in fig.



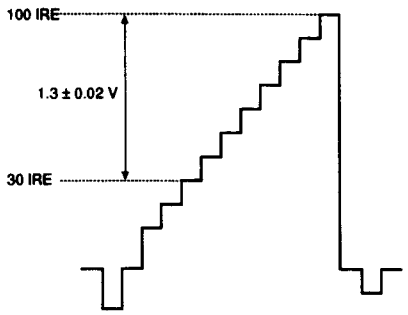
<Fig. 2>

r curve adjustment

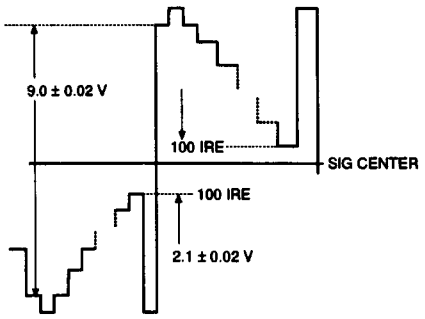
1. Input signal level set up
   1) Change to "WIDE" mode.
   2) Input to PAL double speed signal 10 step.



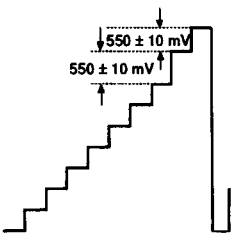
2. Gch
   1) Connect an osilloscope to the TP5011 (G1).
   2) Set to Service Mode and select RGB GAIN, RGB BIAS RGB r GAIN and RGBr CTR1 with the commander.
   3) Adjust RGB GAIN with the commander to 1.3 ± 0.02 V.



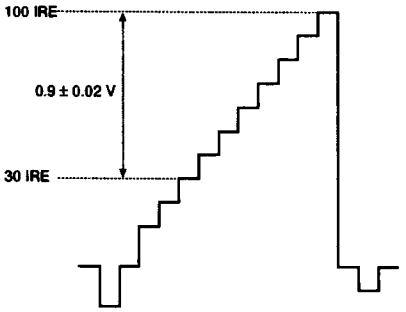
   4) Adjust RGB BIAS with to commander to 2.1 ± 0.02 V.



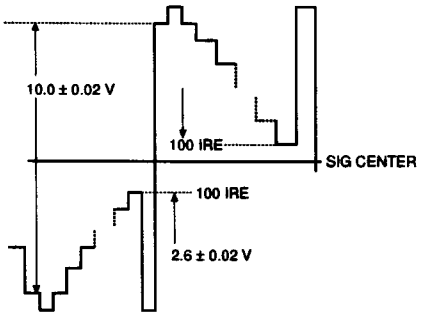
   5) Adjust RGBr GAIN and RGBr CTR1 with the commander to 550 ± 10 mV.



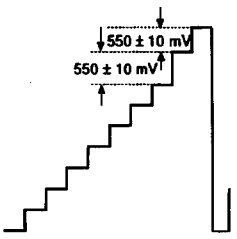
3. Bch
   1) Connect an osilloscope to the TP5010 (B1).
   2) Set to Service Mode and select B GAIN, B BIAS, Br GAIN1, and BrCTR1 with the commander.
   3) Adjust B GAIN with the commander to 0.9 ± 0.02 V.



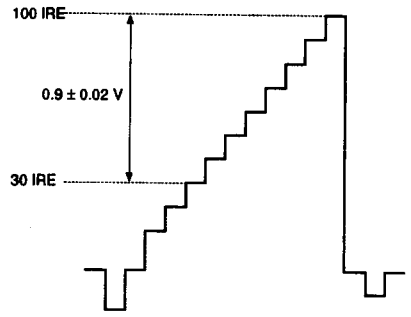
   4) Adjust B BIAS with the commander to 2.6 ± 0.02 V.



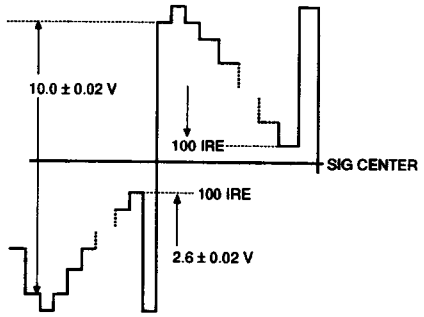
   5) Adjust Br GAIN1 and Br CTR1 with commander to 550 ± 10 mV.



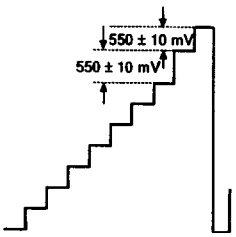
4. Rch
   1) Connect an osilloscope to the TP5026 (R1).
   2) Set to Service Mode and select R GAIN, R BIAS, Rr GAIN1 and RrCTR1 with the commander.
   3) Adjust R GAIN with the commander to 0.9 ± 0.02 V.



   4) Adjust R BIAS with to commander to 2.6 ± 0.02 V.



   5) Adjust Rr GAIN1 and RrCTR1 with the commander to 550 ± 10 mV.

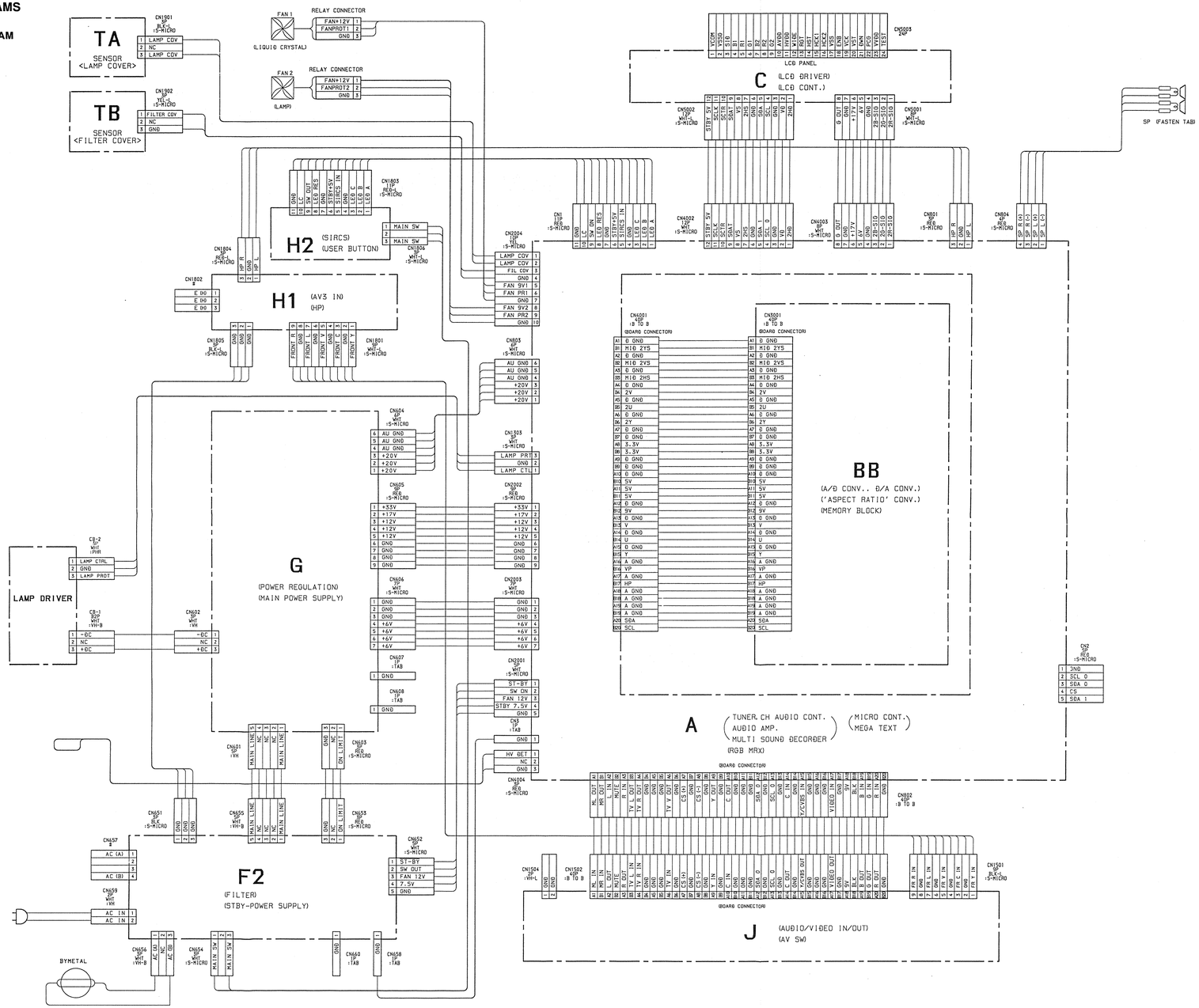


Vcom Adjustment

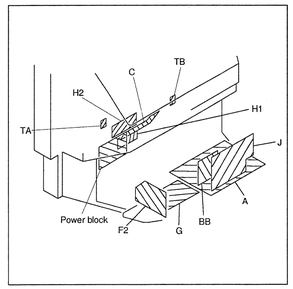
1. Input signal level set up
   1) Change to "WIDE" mode.
   2) Input to PAL double speed signal 10 step.
   3) Connect a digital voltmeter to the TP5008 (SID).
   4) Set to Service Mode and confirm that signal.
   5) Connect a digital voltmeter to the TP5009 (V COM).
   6) Adjust V COM with the commander to 6.8 ± 0.2 V.

SECTION 5
DIAGRAMS

5-1. FRAME SCHEMATIC DIAGRAM



5-2. CIRCUIT BOARDS LOCATION



Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted. (pF: µµF)
  Capacitors without voltage indication are all 50 V.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

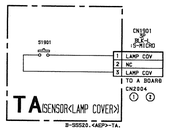
  Pitch: 5 mm
  Rating electrical power 1/4 W (CHIP : 1/10 W)

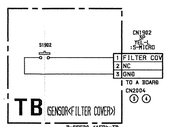
- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-ground.
- : earth-chassis.
- All voltages are in V.
- Readings are taken with a 10 M digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
  * : Can not be measured.
- Readings are taken with a color-bar signal input.
  NO MARK: All signals
  ( ) : SECAM
  < > : except for SECAM
- Circled numbers are waveform references.
- : B + bus.
- : B − bus.
- : Signal path.

Terminal name of semiconductors in silk screen printed circuit (※)

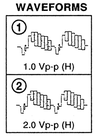
	Device	Printed symbol	Terminal name	Circuit
①	Transistor	T	Collector / Base / Emitter	
②	Transistor	—	Collector / Base / Emitter	
③	Diode		Cathode / Anode	
④	Diode	T	Cathode / Anode (NC)	
⑤	Diode	—	Cathode / Anode (NC)	
⑥	Diode	T	Common Anode / Cathode	
⑦	Diode	—	Common Anode / Cathode	
⑧	Diode	T	Common Anode / Anode	
⑨	Diode	—	Common Anode / Anode	
⑩	Diode	T	Common Cathode / Cathode	
⑪	Diode	—	Common Cathode / Cathode	
⑫	Transistor (FET)	T	Drain / Source / Gate	
⑬	Transistor (FET)	—	Drain / Source / Gate	
⑭	Transistor (FET)	—	Drain / Source / Gate	
⑮	Transistor	—	Emitter / Collector / Base	
⑯	Transistor	—	C1B1E2 / E1B2C1	
⑰	Transistor	—	C1B2E2 / E1B1C2	
⑱	Transistor	—	C1 B2 E2 / E1 B1 C2	
⑲	Transistor	—	C1 B2 E2 / E1 B1 C2	
⑳	Transistor	—	E2 B1 E1 / C2 C1B2	
㉑	Transistor	—	B1 E1 E2 / C1 C2	
㉒	Transistor	—	B2 E2 B1 / C2 C1	
—	Discrete semiconductor			

(Chip semiconductors that are not actually used are included.)



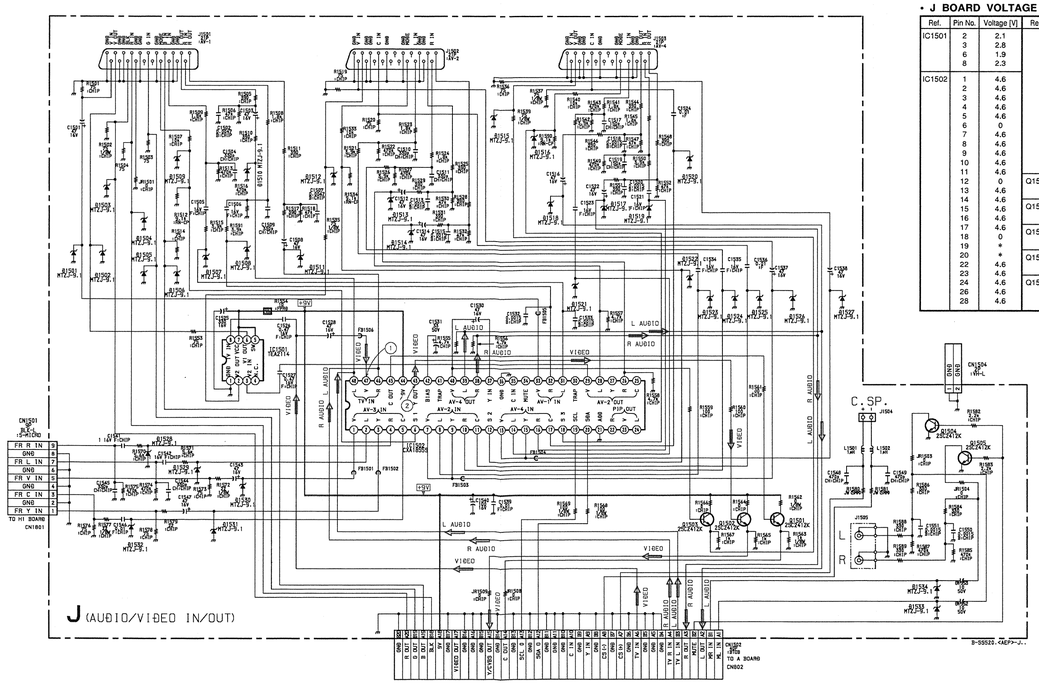


• J BOARD WAVEFORMS



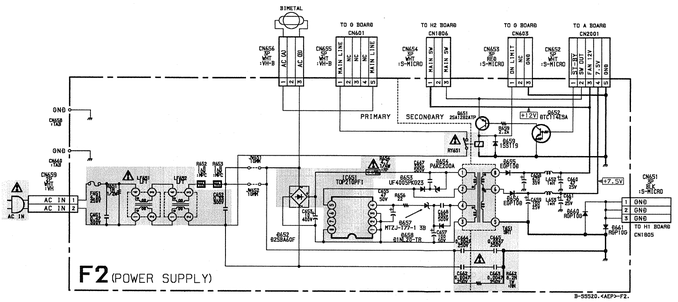
• J BOARD DESCRIPTION

REF. NO.		REF. NO.	
IC1501	BUFFER	D1514	PROTECT
IC1502	AV SW	D1515	PROTECT
		D1516	PROTECT
Q1501	BUFFER	D1517	PROTECT
Q1502	BUFFER	D1518	PROTECT
Q1503	BUFFER	D1519	PROTECT
Q1504	MUTE	D1520	PROTECT
Q1505	MUTE	D1521	PROTECT
		D1522	PROTECT
D1501	PROTECT	D1523	PROTECT
D1502	PROTECT	D1524	PROTECT
D1503	PROTECT	D1525	PROTECT
D1504	PROTECT	D1526	PROTECT
D1505	PROTECT	D1527	PROTECT
D1506	PROTECT	D1528	PROTECT
D1507	PROTECT	D1529	PROTECT
D1508	PROTECT	D1530	PROTECT
D1509	PROTECT	D1531	PROTECT
D1510	PROTECT	D1532	PROTECT
D1511	PROTECT	D1533	PROTECT
D1512	PROTECT	D1534	PROTECT
D1513	PROTECT		



• J BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
IC1501	2	2.1		29	0
	3	2.8		31	4.6
	6	1.9		32	4.6
	8	2.3		33	4.6
IC1502	1	4.6		35	4.6
	2	4.6		37	4.6
	3	4.6		38	4.6
	4	4.6		39	4.6
	5	4.6		40	4.6
	6	0		42	4.6
	7	4.6		43	4.6
	8	4.6		45	4.5
	9	4.6		46	4.6
	10	4.6		47	4.6
	11	4.6		48	4.6
	12	0	Q1501	B	4.5
	13	4.6		E	3.8
	14	4.6	Q1502	B	4.5
	15	4.6		E	3.8
	16	4.6	Q1503	B	4.5
	17	4.6		E	3.9
	18	0	Q1504	B	0.3
	19	*		C	4.3
	20	*	Q1505	B	0.3
	22	4.6		C	4.3
	23	4.6			
	24	4.6			
	26	4.6			
	28	4.6			

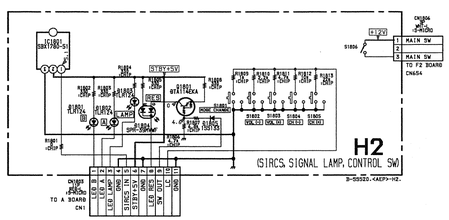


• F2 BOARD DESCRIPTION

REF. NO.	
IC651	ST-BY POWER REG.
Q651	P-SW
Q652	P-SW
D652	RECT
D653	RECT
D654	CLAMP
D655	RECT
D656	RECT
D657	CLAMP
D658	RECT
D659	PROTECT
D660	PROTECT
D661	PROTECT

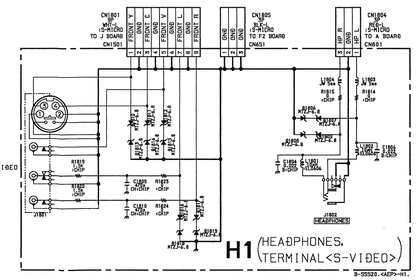
• F2 BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]
IC651	4	5.7
	5	237.2
Q651	B	8.1
	C	8.9
	E	8.9
Q652	B	4.2
	C	0



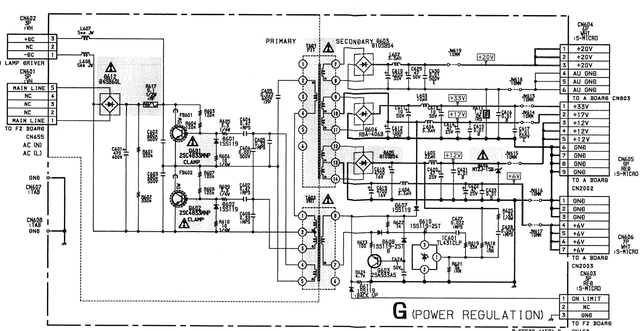
• H2 BOARD DESCRIPTION

REF. NO.	
IC1801	REMO-CON RECEIVER
Q1801	SW
D1801	LED
D1802	LED
D1803	LED
D1804	LED
D1805	SW



• H1 BOARD DESCRIPTION

REF. NO.	
D1806	PROTECT
D1807	PROTECT
D1808	PROTECT
D1809	PROTECT
D1810	PROTECT
D1811	PROTECT
D1812	PROTECT
D1813	PROTECT
D1814	PROTECT
D1815	PROTECT
D1816	PROTECT
D1817	PROTECT
D1818	PROTECT
D1819	PROTECT



• G BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]
IC601	1	2.5
	3	13.7
Q601	B	83.9
	C	180.3
	E	84.6
Q602	B	0
	C	84.8
	E	0.6
Q603	B	14.3
	E	14.4

• G BOARD DESCRIPTION

REF. NO.	
IC601	REGURATOR
Q601	CONVERTER
Q602	CONVERTER
Q603	CLAMP
D601	CLAMP
D602	CLAMP
D603	RECT
D604	RECT
D605	RECT
D606	PROTECT
D607	SW
D608	CLAMP
D610	CLAMP
D611	CLAMP
D612	RECT

Schematic diagrams
F2 G H1 H2 J TA TB boards →

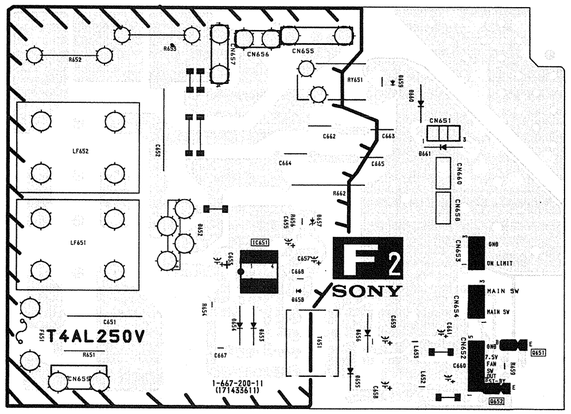
KL-40WA1/40WA1K/40WA1U
RM-862

KL-40WA1/40WA1K/40WA1U
RM-862

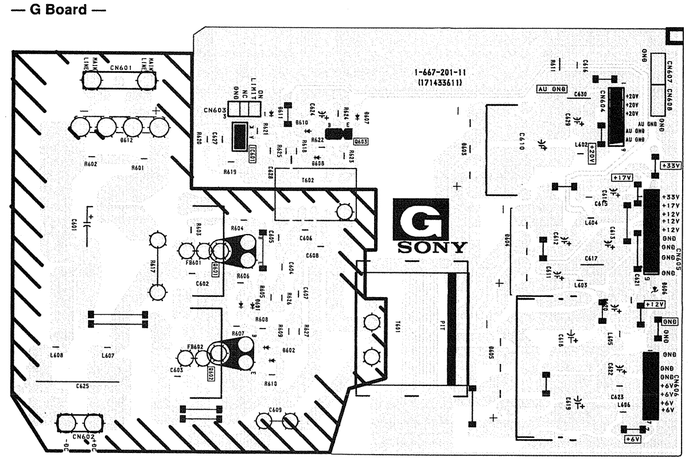
F2 [POWER SUPPLY] G [POWER REGULATION] H1 [HEADPHONE TERMINAL <S-VIDEO>] H2 [SIRCS, SIGNAL LAMP, CONTROL SW]

J [AUDIO/VIDEO IN/OUT] TA [SENSOR <LAMP COVER>] TB [SENSOR <FILTER COVER>]

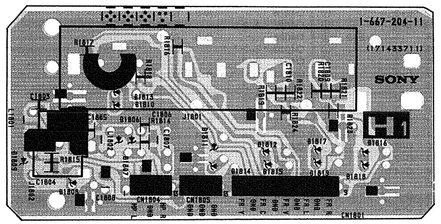
— F2 Board —



— G Board —



— H1 Board —

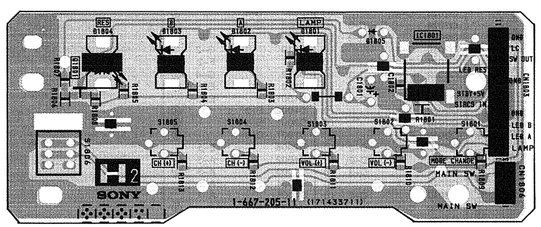


H1 BOARD
Terminal name of semiconductors in silk screen printed circuit (*)

Ref.	*
Q1801	①

*: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 34)

— H2 Board —

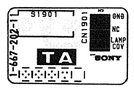


J BOARD
Terminal name of semiconductors in silk screen printed circuit (*)

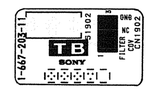
Ref.	*
Q1501–Q1505	①

*: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 34)

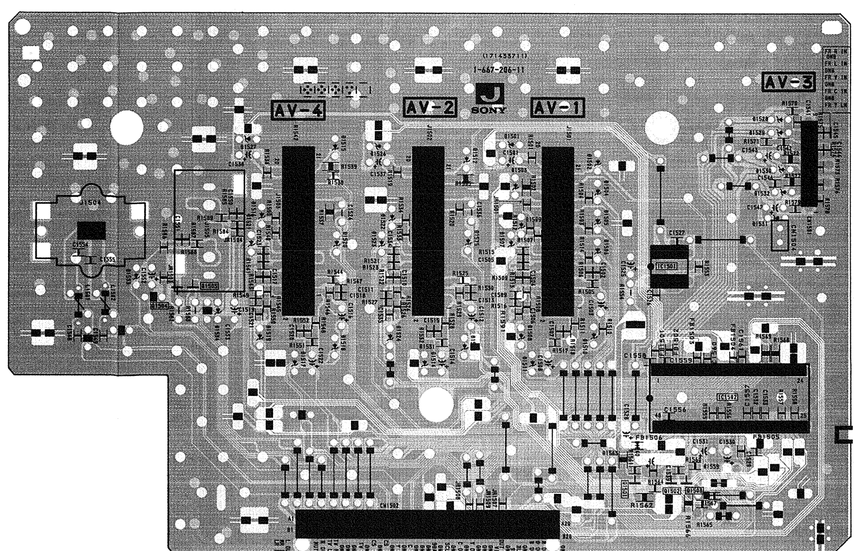
— TA Board —



— TB Board —

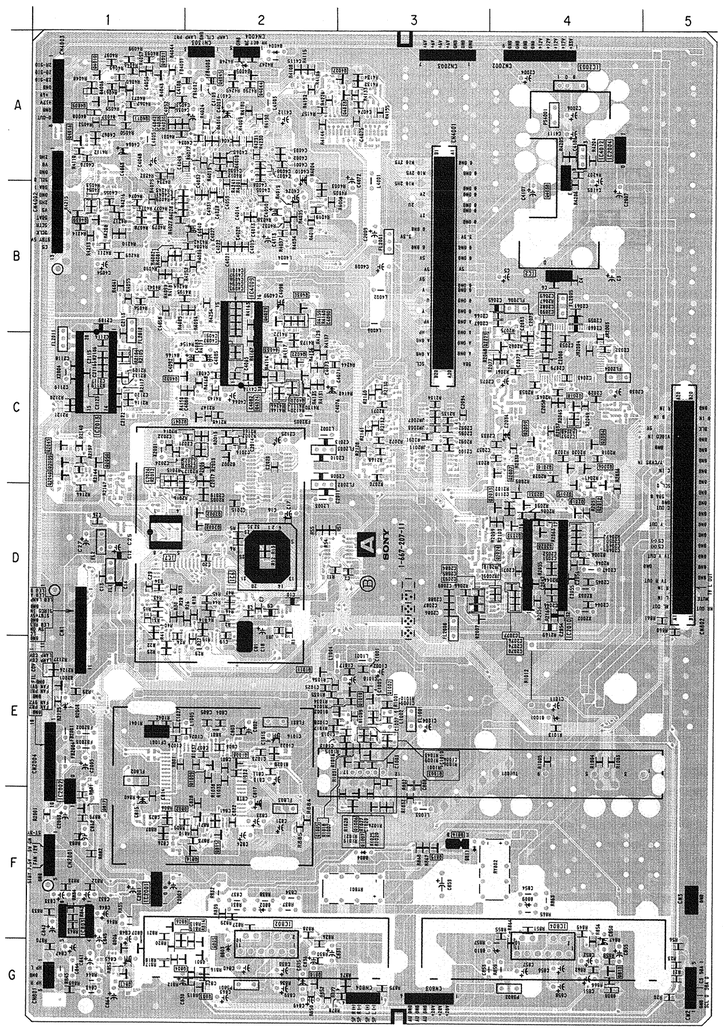


— J Board —



— A Board (Conductor Side) —

A [TUNER, AUDIO CONT., COLOR SYSTEM RGB MRX, MICRO CONT.]



• : Pattern from the side which enables seeing.
• : Pattern of the rear side.

• A BOARD SEMICONDUCTOR LOCATION

IC

	(Conductor Side)	(Component Side)
IC1		D–3
IC2		B–2
IC3		D–3
IC4		D–3
IC5		D–4
IC6		D–3
IC7		D–4
IC801		E–4
IC802		F–3
IC803		F–5
IC804		F–2
IC1001		E–3
IC2001		F–4
IC2002		E–5
IC2003		A–1
IC2004		A–1
IC2005		C–3
IC2006		C–4
IC2007		C–1
IC2008		C–1
IC2009		C–2
IC2010		D–2
IC2011		C–2
IC2012		D–2
IC2013		C–5
IC2014		C–5
IC4001		A–4
IC4002		B–3
IC4003		B–3
IC4004		B–4
IC4005		B–4
IC4006		B–4
IC4007		B–4
IC4009		C–4
IC4010		A–3
IC4011		A–3
IC4012		A–1

TRANSISTOR

	(Conductor Side)	(Component Side)	*
Q1		D–5	⑨
Q801		F–4	⑨
Q802	F–2		⑤
Q803	G–2		⑤
Q804	G–2		⑤
Q805	F–2		⑤
Q806	F–1		⑤
Q807		G–5	⑨
Q808		G–5	⑨
Q810	G–2		⑤
Q811	G–1		⑤
Q813	G–4		⑤
Q814		F–2	
Q815	F–2		⑤
Q816	F–2		⑤
Q817	F–1		⑤
Q818		E–5	⑨
Q819	F–3		⑤
Q1001		E–3	
Q1002	E–3		⑤
Q1003	E–3		⑤
Q1004		E–3	⑨
Q1005	E–3		⑤
Q1006	E–3		⑤
Q1007	F–3		⑤
Q1008	E–2		⑤
Q1009	E–2		⑤
Q1010	E–3		⑤
Q1011	E–2		⑤
Q2001		F–5	⑨
Q2002	D–2		⑤
Q2003	D–2		⑤
Q2004	C–4		⑨
Q2005		C–1	⑨
Q2006	C–4		⑤
Q2007	C–4		⑤
Q2008		C–2	⑨
Q2009	C–4		⑤
Q2010	C–4		⑤
Q2011		C–2	⑨
Q2012	C–4		⑨
Q2013		C–2	⑨
Q2014		C–1	⑨
Q2015	C–4		⑤
Q2016		C–1	⑨
Q2017		C–2	⑨
Q2018	C–4		⑤
Q2019	D–4		⑤
Q2020	D–4		⑤
Q2021		C–2	⑨
Q2022		B–2	⑨
Q2023	C–4		⑤
Q2024		C–3	⑨
Q2029		C–3	⑨
Q2030	D–4		⑤
Q2031	D–4		⑤
Q2032		C–3	⑨
Q2034		C–4	⑨
Q2036		C–4	⑨
Q2039	C–1		⑤
Q2040	C–1		⑤
Q2041	C–2		⑤
Q2042		D–2	⑨
Q2043		D–2	⑨
Q2044		D–2	⑨
Q2045	C–1		⑤
Q2046		C–2	⑨
Q2050	C–1		⑤
Q4001	A–1		⑤
Q4009	A–1		⑤
Q4010	A–1		⑤
Q4011	A–1		⑤
Q4012		A–4	⑨
Q4013		A–4	⑨
Q4014		A–4	⑨
Q4015		C–3	⑨
Q4017		C–3	⑨
Q4018		C–3	⑨
Q4019		C–3	⑨
Q4020	C–2		⑤
Q4023	A–3		⑤
Q4025		A–3	⑨
Q4026		A–3	⑨
Q4027	A–3		⑤
Q4028		C–4	⑨
Q4029	B–2		⑤
Q4030	B–2		⑤
Q4031		A–3	⑨
Q4032	C–2		⑤
Q4033	C–2		⑤
Q4034		B–3	⑨
Q4035		B–3	⑨
Q4036		C–4	⑨
Q4037		B–3	⑨
Q4038		A–①	
Q4039	B–1		⑤
Q4043		C–3	⑨
Q4044	A–2		⑤
Q4045	A–2		⑤

DIODE

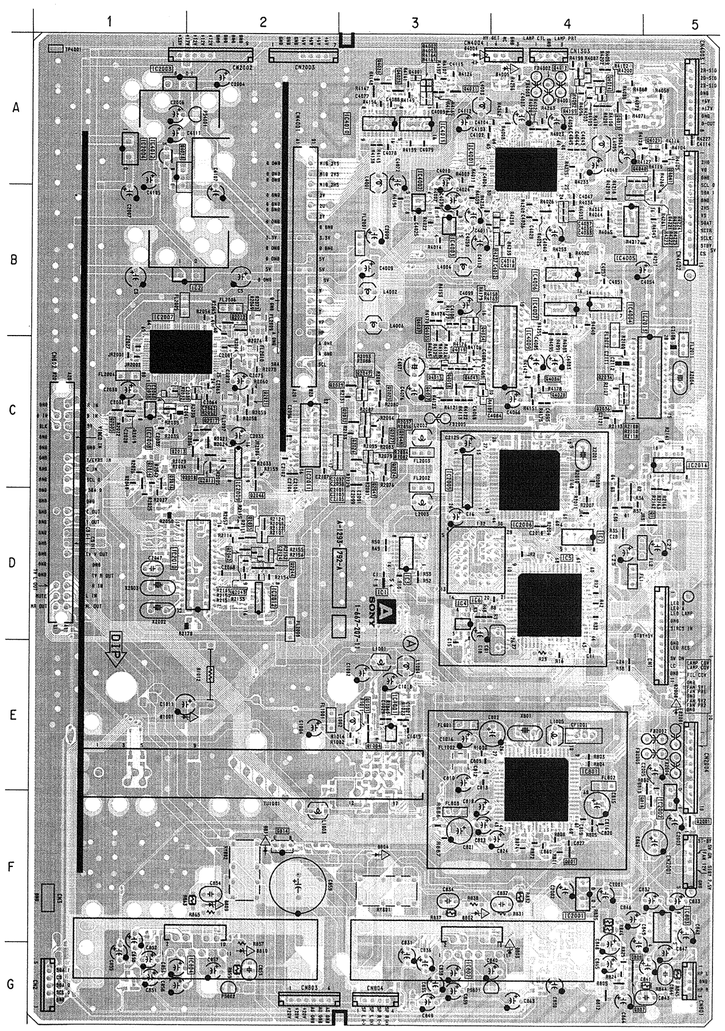
	(Conductor Side)	(Component Side)	*
D1		D–4	
D2		C–4	
D3		C–4	⑪
D4		C–4	⑨
D801	G–2		⑥
D802		F–3	
D803		G–4	
D804		F–3	
D805		G–4	⑨
D806	G–1		⑨
D807	G–1		⑨
D808	G–4		⑨
D809		F–2	
D810		G–2	
D811		F–2	
D812		G–4	⑨
D813		E–5	⑨
D1001		E–2	
D1002	E–3		⑨
D2001	E–1		⑨
D2007	D–3		④
D2008		E–5	
D4002		A–3	⑨
D4003		A–3	⑨
D4004		A–3	
D4005		A–4	
D4006	A–1		⑨
D4007	A–1		⑨
D4008	A–1		⑨

CRYSTAL

	(Conductor Side)	(Component Side)
X801		E–4
X2001		C–4
X2002		D–1
X2003		D–1
X2004		C–5

*: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 34)

— A Board (Component Side) —

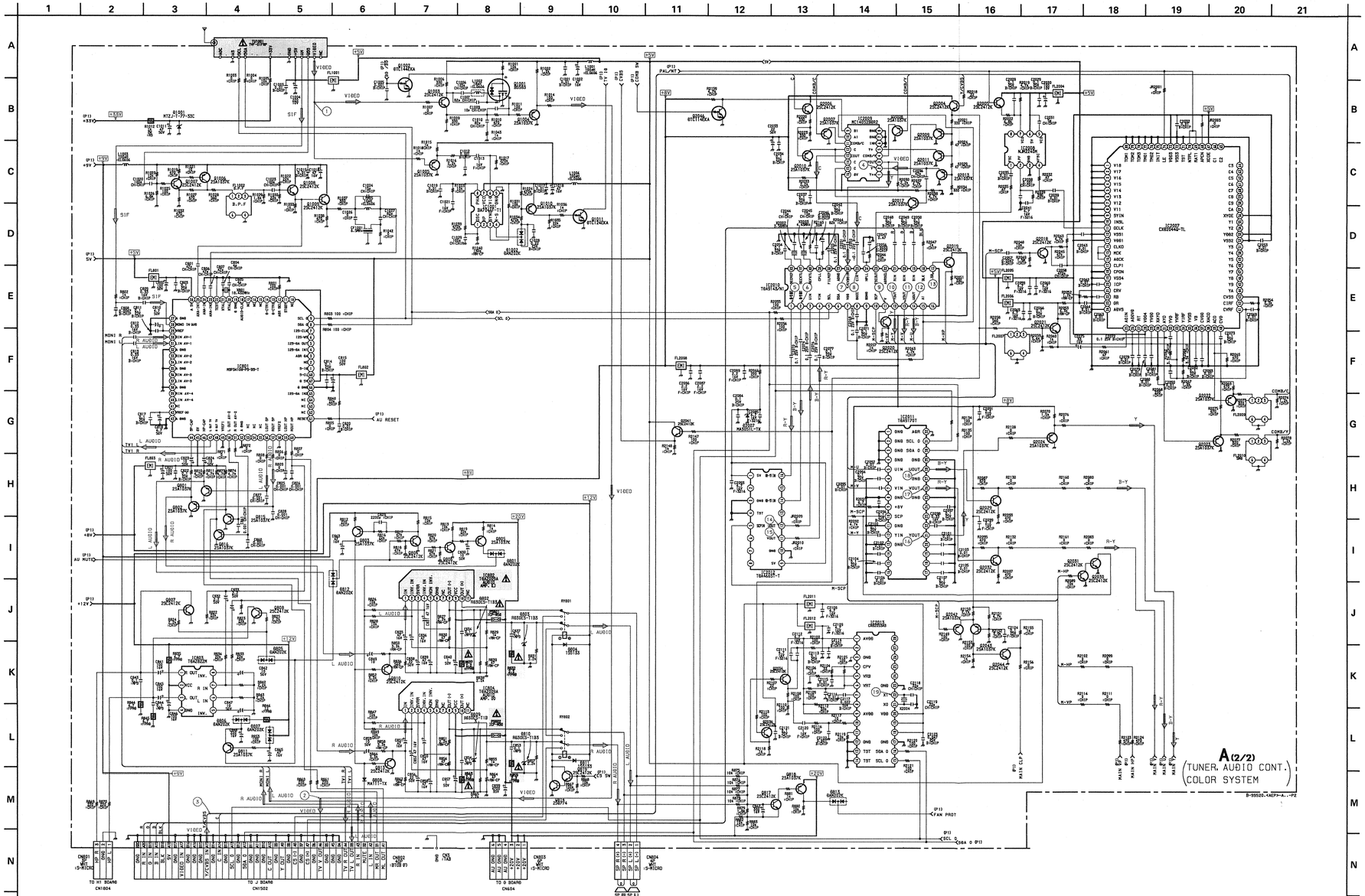


• : Pattern from the side which enables seeing.
• : Pattern of the rear side.

(2) Schematic Diagram of A (2/2) Board

• A (2/2) BOARD WAVEFORMS

①	1.0 Vp-p (H)	②	1.0 Vp-p (H)	③	2.0 Vp-p (H)	④	0.2 Vp-p (H)	⑤ except for SECAM	0.6 Vp-p (H)	⑤ SECAM	1.2 Vp-p (H)	⑥ except for SECAM	0.7 Vp-p (H)	⑥ SECAM	1.5 Vp-p (H)	⑦ except for SECAM	1.0 Vp-p (H)	⑦ SECAM	0.8 Vp-p (H)	⑧ except for SECAM	0.5 Vp-p (H)
⑨ except for SECAM	4.3 Vp-p (V)	⑨ SECAM	0.1 Vp-p (V)	⑩	1.3 Vp-p (H)	⑪	1.1 Vp-p (H)	⑫	1.5 Vp-p (H)	⑬ except for SECAM	4.3 Vp-p (H)	⑬ SECAM	0.1 Vp-p (H)	⑭	1.5 Vp-p (H)	⑮	1.1 Vp-p (H)	⑯	1.0 Vp-p (H)	⑰	1.1 Vp-p (H)
⑱	1.5 Vp-p (H)	⑲	4.0 Vp-p (50 MHz)																		



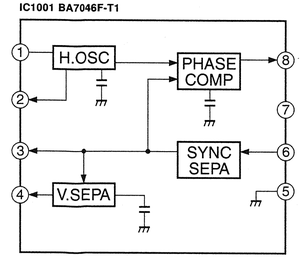
• A (2/2) BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
IC801	8	4.8		3	1.9	IC2012	5	0.7	Q1003	B	1.8	Q2016	B	0
	9	4.7		4	1.5		11	2.9		C	3.9		C	7.9
	12	0		5	0		12	2.9		E	1.1		E	0
	20	2.1		9	7.9		14	1.4	Q1004	B	1.1	Q2017	B	3.9
	21	2.3		10	7.9		16	1.4		E	1.8		E	0
	23	1.5		11	0.7	IC2013	2	1.2	Q1005	B	1.8	Q2018	B	-2.5
	24	1.5		12	0		4	0.9		E	2.4		C	3.5
	25	0.1		13	1.1		5	0.4	Q1006	B	8.2	Q2019	B	0.4
	28	3.7		14	0		6	2.6		C	4.5		E	0.3
	29	2.6		15	0		7	2.6	Q1007	B	3.2	Q2020	B	0
	30	3.7	IC2010	1	2.1		8	1.5		C	8.2		E	0.1
	31	3.7		2	2.1		10	1.9		E	2.6	Q2021	B	2.9
	42	3.7		3	2.5		11	0.1	Q1008	B	4.3		E	2.3
	44	0		4	2.5		15	*		E	3.7	Q2022	B	1.0
	46	6.9		5	*		16	*	Q1009	B	3.7		E	1.6
	47	3.7		6	*		21	2.6		E	3.0	Q2023	B	0.9
	48	3.7		8	5.0		22	2.3	Q1010	B	4.4		E	1.5
	50	3.7		10	0.7	Q802	B	0.1		C	4.8	Q2024	B	2.2
	51	3.7		11	0.1		E	0.7	Q1011	B	4.7		E	2.8
	56	0.1		12	3.2	Q803	B	8.9		C	0	Q2029	B	2.4
	57	0.1		13	2.6		C	0.3	Q2004	B	3.8		C	6.1
	59	0.5		14	2.6	Q804	B	0.1		E	3.2		E	1.8
	60	0.5		15	7.9		C	8.9	Q2005	B	5.1	Q2030	B	-0.3
	61	5.0		17	0.4	Q805	B	19.6		E	4.5		C	0.7
IC802	1	1.4		18	0		C	0.1	Q2006	B	0.2	Q2031	B	0.1
	2	0.8		19	0.2		E	19.6		C	19.6		C	-0.3
	3	10.9		20	3.2	Q806	B	0.2	Q2008	B	3.8	Q2032	B	2.4
	4	0.8		21	0.1		C	19.6		E	3.2		C	0
	5	1.4		23	<4.2>	Q810	B	0.3	Q2007	B	0		E	1.7
	8	9.5		24	(0.1)		E	0		E	0.7	Q2033	B	2.6
	10	9.6		25	3.9	Q811	B	11.5	Q2008	B	0.9		E	1.9
IC803	1	5.7		26	0		C	0.5		E	1.5	Q2034	B	0
	3	5.8		28	3.8		E	12.0	Q2009	B	1.8		C	12.4
	5	0.5		30	3.6	Q814	B	0		E	0	Q2036	B	3.2
	6	0		31	2.5		C	12.4	Q2010	B	1.6		E	2.6
	7	0		32	2.7	Q815	B	3.7		E	0	Q2041	B	3.2
	8	0.6			<0>		E	4.3	Q2011	B	1.6		E	2.6
IC804	1	1.4			(3.9)	Q816	B	3.7		E	0	Q2042	B	0.7
	2	0.8	IC2011	5	1.6		E	4.3	Q2012	B	7.4		E	1.3
	3	10.9		6	4.0	Q817	B	0.8		C	0.6	Q2043	B	3.6
	4	0.8		7	1.5		C	0	Q2013	B	0		C	0.1
	5	1.4		10	0		E	0		E	0	Q2044	B	0.1
	8	9.5		12	0	Q818	B	4.4					C	4.6
	10	9.6		14	0		C	0	Q2014	B	0.9	Q2046	B	0.1
IC1001	1	2.0		15	0	Q1001	G	5.0		C	7.4		C	7.9
	3	0.7		16	0.4		D	1.1		E	0.3			
	4	4.9		17	0.1		S	1.1	Q2015	B	7.9			
	6	2.0		18	0	Q1002	B	0		C	0			
	8	2.5		19	0		C	5.0						
IC2008	1	2.6		20	0.1									
	2	2.2		21	2.2									
	4	3.2		22	1.2									
	5	3.3		24	5.0									
	7	3.6		26	2.4									
IC2009	1	0		28	2.5									
	2	0		30	0									
				31	*									

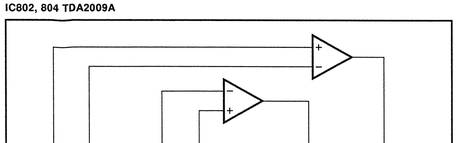
• A (2/2) BOARD DESCRIPTION

REF. NO.	
IC801	MSP (STEREO DET AUDIO CONTROL)
IC802	AUDIO AMP. (L)
IC803	AUDIO AMP. (HEAD PHONE)
IC804	AUDIO AMP. (R)
IC1001	SYNC SEP.
IC2007	COMB
IC2008	MULTI PLIER
IC2009	COMB SW
IC2010	CHROMA DEC.
IC2011	AI
IC2012	DELAY LINE
IC2013	AUTO LINE
Q801	BUFFER
Q802	BUFFER
Q803	BUFFER
Q804	MUTE
Q805	BUFFER
Q806	MUTE
Q807	SW
Q808	SW
Q810	SW
Q811	MUTE
Q813	SW
Q814	RELAY DRIVE
Q815	BUFFER
Q816	BUFFER
Q817	PROTECT
Q818	PROTECT
Q819	RELAY DRIVE
Q1001	SW
Q1002	SW
Q1003	BUFFER
Q1004	AMP.
Q1005	BUFFER
Q1006	AMP.
Q1007	AMP.
Q1008	BUFFER
Q1009	BUFFER
Q1010	BUFFER
Q1011	SW
Q2004	SW
Q2005	SW
Q2006	BUFFER
Q2007	BUFFER
Q2008	BUFFER
Q2009	BUFFER
Q2010	BUFFER
Q2011	BUFFER
Q2013	BUFFER
Q2017	BUFFER
Q2018	BUFFER
Q2019	BUFFER
Q2020	BUFFER
Q2021	BUFFER
Q2022	BUFFER
Q2023	BUFFER
Q2024	BUFFER
Q2029	BUFFER
Q2030	BUFFER
Q2031	AMP.
Q2032	BUFFER
Q2034	BUFFER
Q2035	BUFFER
Q2036	BUFFER
Q2041	BUFFER
Q2042	BUFFER
Q2043	BUFFER
Q2046	BUFFER
D801	SW
D802	PROTECT
D803	PROTECT
D804	CLAMP
D805	SW
D806	SW
D807	SW
D808	SW
D809	PROTECT
D810	PROTECT
D811	CLAMP
D812	SW
D813	SW
D1001	PROTECT
D1002	SW
D2007	PROTECT

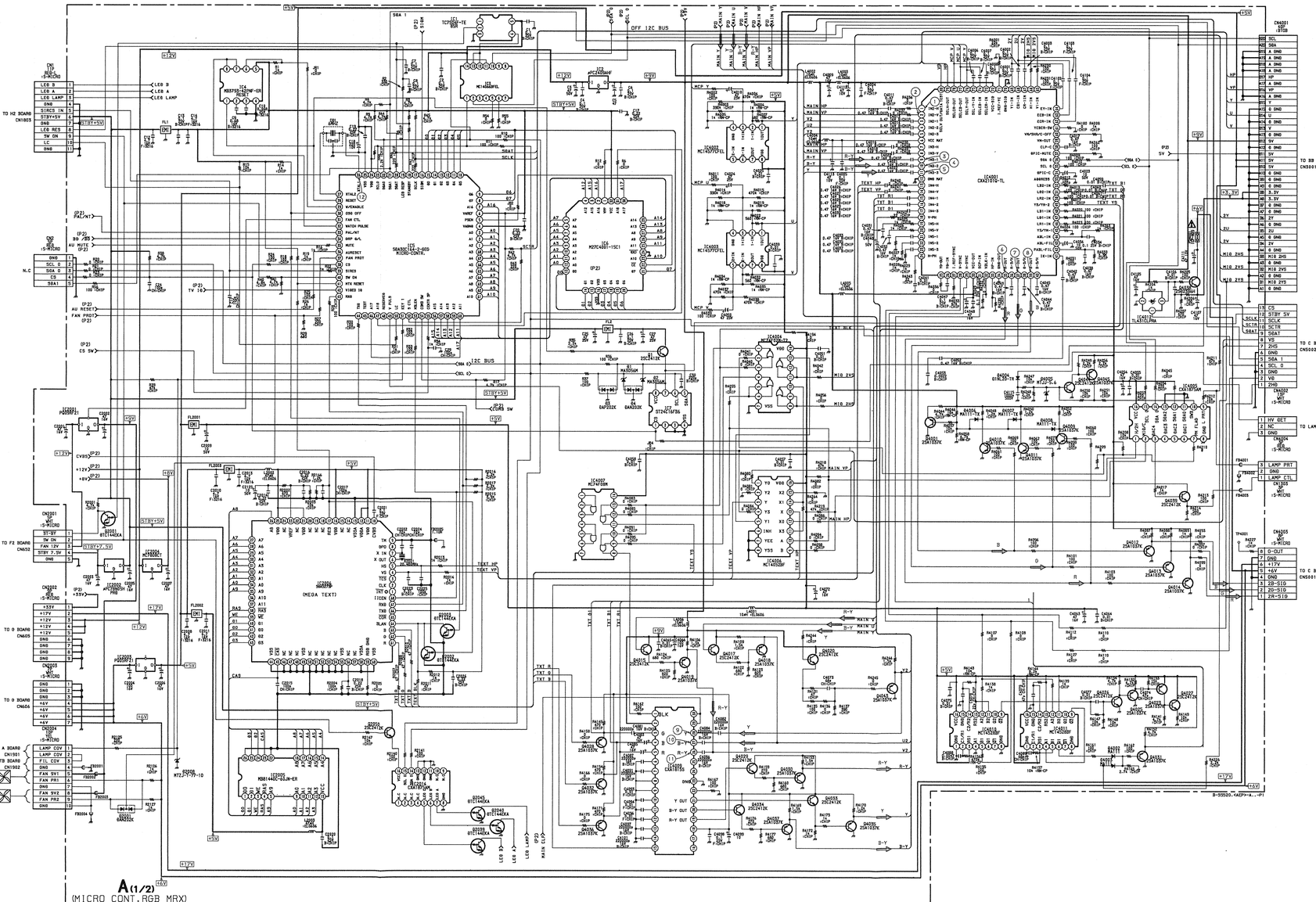
• A (2/2) BOARD IC1001 BA7046F-T1



• A (2/2) BOARD IC802, 804 TDA2009A



(3) Schematic Diagram of A (1/2) Board



• A (1/2) BOARD WAVEFORMS

①	②	③	④	⑤	⑥	
4.3 Vp-p (H)	4.3 Vp-p (V)	0.6 Vp-p (H)	0.7 Vp-p (H)	0.6 Vp-p (H)	3.5 Vp-p (H)	
⑦	⑧	⑨	⑩	⑪	⑫	
3.5 Vp-p (H)	3.5 Vp-p (H)	0.7 Vp-p (H)	0.8 Vp-p (H)	0.6 Vp-p (H)	4.0 Vp-p (6 MHz)	

• A (1/2) BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]
IC1	2	0
	4	5.1
IC3	1	*
	2	*
	10	4.6
	12	5.1
	13	5.1
IC4	1	4.9
	2	1.1
	3	5.0
	6	0.2
	7	2.6
	8	2.5
IC7	1	5.1
	5	4.3
	6	4.3
IC2005	1	3.8
	2	3.8
	3	0.1
	4	1.2
	5	0.2
	9	1.7
	10	0.1
	11	0.2
	12	0.2
	14	0.2
	15	0.2
	16	0.1
	17	0.3
	18	0.2
	23	3.8
	24	3.8
	25	3.8
IC2014	5	0.4
	6	0.4
	7	0.4
	14	4.1
	15	3.1
IC4002	1	2.0
	2	0.4
	3	2.2
IC4003	1	2.0
	2	2.3
	3	2.2
	5	2.5
	6	2.5
	7	2.5
IC4004	1	0.1
	2	5.3
	3	0.3
	4	0.1
	5	4.9
	6	4.9
	8	3.0
	9	3.0
	10	0.4
	11	3.2
	12	3.2
	13	0
IC4005	1	4.9
	2	4.9
	3	5.4
	4	8.7
	5	8.7
	6	8.7
	7	5.4
	9	0.1
	10	3.8
	12	0
	14	4.7
	15	*
IC4006	1	0.1
	2	0
	3	0.1
	4	0
	5	0.2
	9	4.9
	10	4.9
	11	0
	12	0.3
	13	0.3
	14	0.4
IC4007	8	0.1
	9	0.1
	10	0.3
	11	0.1
	12	4.9
	13	0.3
IC4009	1	0.1
	3	6.1
	4	5.4
	5	5.4
	6	3.6
	7	3.6
	10	6.1
	11	5.5
	12	5.4
	13	3.6
	14	3.6
	15	0.1
	19	4.0
	20	4.0
	21	4.2
	22	0
	26	6.1
	27	6.1
	28	6.3
	29	4.6
	30	4.6
IC4010	2	4.5
	5	0.3
	6	0.2
	9	4.6
	11	4.9
	12	0.5
	13	4.9
	14	4.8
IC4011	2	4.7
	3	4.9
	4	4.8
	5	4.9
	6	0.2
	9	4.8
	11	5.0
	12	0.6
	13	4.9
	14	4.8
IC4012	1	2.5
	3	3.9
Q1	B	4.9
Q2001	B	0
	C	3.7
Q2002	B	0.2
	C	0.3
Q2003	B	0.2
	C	0.3
Q2039	B	0.4
	C	3.5
Q2040	B	0.4
	C	3.5
Q2045	B	0.4
	C	3.5
Q4001	B	3.0
	E	0
Q4009	B	1.9
	C	2.5
Q4010	B	1.9
	C	2.6
	E	0
Q4011	B	1.9
	C	2.6
	E	0
Q4012	B	1.9
	E	2.6
Q4013	B	1.9
	E	2.6
Q4014	B	1.9
	E	2.5
Q4015	B	6.2
	E	5.5
Q4017	B	6.1
	E	5.5
Q4018	B	3.0
	E	3.6
Q4019	B	3.0
	E	3.7
Q4020	B	2.8
	E	2.2
Q4023	B	4.9
	C	0.1
Q4025	B	0.1
	E	0.7
Q4026	B	0.6
Q4027	B	0.1
	E	0.1
Q4028	B	0
	E	0.7
Q4029	B	4.0
	E	3.4
Q4030	B	2.4
	E	3.0
Q4031	B	0.6
	E	0
Q4032	B	0
	E	0.7
Q4033	B	4.2
	E	3.6
Q4034	B	4.0
	E	3.4
Q4035	B	3.6
	E	4.2
Q4036	B	0
	E	0.7
Q4037	B	2.4
	E	3.1
Q4038	B	3.9
Q4039	B	5.3
	E	4.7
Q4043	B	1.7
	E	2.4
Q4044	B	0.7
	C	3.1
Q4045	B	3.1
	C	3.8
	E	3.8

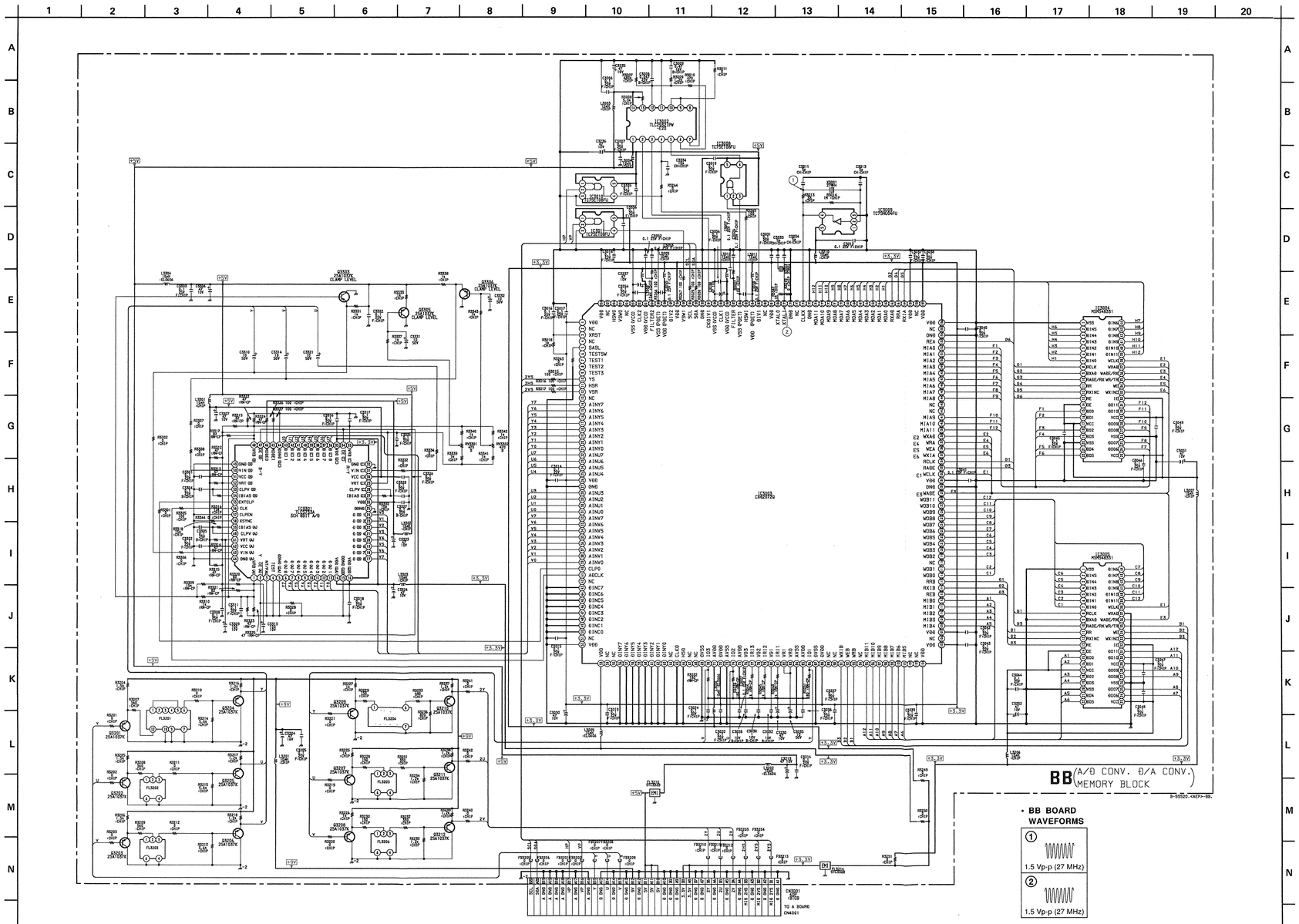
• A (1/2) BOARD DESCRIPTION

REF. NO.		REF. NO.		REF. NO.		REF. NO.	
IC1	SW CONTROL	IC4007	BUFFER	Q4014	BUFFER	Q4038	REGULATOR
IC2	REGULATOR	IC4009	RGB PROCESSOR	Q4015	BUFFER	Q4039	SW
IC3	BUS SW	IC4010	SW	Q4017	BUFFER	Q4043	BUFFER
IC4	RESET	IC4011	SW	Q4018	BUFFER	Q4044	AMP
IC5	MICRO-CONTR	IC4012	REGULATOR	Q4019	BUFFER	Q4045	BUFFER
IC6	ROM			Q4020	BUFFER		
IC7	NVM	Q1	SW	Q4023	BUFFER	D1	PROTECT
IC2001	REGULATOR	Q2001	SW	Q4025	BUFFER	D2	PROTECT
IC2002	REGULATOR	Q2002	BUFFER	Q4026	BUFFER	D3	PROTECT
IC2003	REGULATOR	Q2003	BUFFER	Q4027	BUFFER	D4	PROTECT
IC2004	REGULATOR	Q2039	BUFFER	Q4028	BUFFER	D2001	SW
IC2005	MEMORY	Q2040	BUFFER	Q4029	BUFFER	D2008	PROTECT
IC2006	MEGA TEXT	Q2045	BUFFER	Q4030	BUFFER	D4002	SW
IC2014	D/A C	Q2050	SW	Q4031	BUFFER	D4003	SW
IC4001	MCP	Q4001	BUFFER	Q4032	BUFFER	D4004	DEFECT
IC4002	AMP	Q4009	AMP	Q4033	BUFFER	D4005	PROTECT
IC4003	AMP	Q4010	AMP	Q4034	BUFFER	D4006	SW
IC4004	SW	Q4011	AMP	Q4035	BUFFER	D4007	SW
IC4005	D/A C	Q4012	BUFFER	Q4036	BUFFER	D4008	SW
IC4006	SW	Q4013	BUFFER	Q4037	BUFFER		

Schematic diagram
← A (2/2) board

Schematic diagram
A (1/2) board →

(4) Schematic Diagram of BB Board



• BB BOARD WAVEFORMS

① 1.5 Vp-p (27 MHz)

② 1.5 Vp-p (27 MHz)

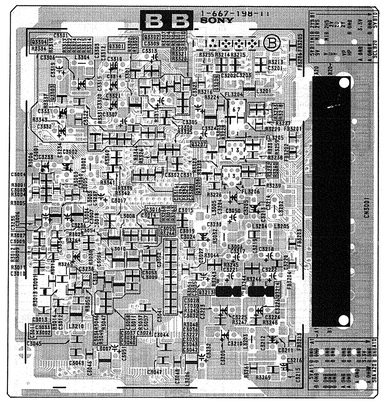
• BB BOARD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]
IC3001	3	2.4
	4	0.4
	5	1.8
	6	0
	7	0
	12	0
	13	2.9
IC3002	2	3.2
	3	2.8
	4	0
	5	2.4
	6	2.0
	7	0
	12	2.0
	13	3.0
IC3004	2	1.2
	3	1.1
	4	1.4
	5	1.1
	6	1.4
	7	1.4
	8	1.3
	9	0
	10	0
	11	0
	12	0
	13	2.2
	14	3.3
	15	2.1
	16	1.2
	18	1.7
	19	1.2
	21	1.9
	22	1.7
	24	1.0
	25	0.5
	27	2.2
	28	0
	30	1.7
	31	1.5
	32	3.3
	33	0
	34	2.5
	35	0
	36	0
	37	0
	38	1.6
	39	1.5
	40	1.4
	41	1.4
	42	1.6
	43	0.6
	44	1.2
IC3005	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
	8	1.3
	9	0
	10	0
	11	0
	12	0
	13	0
	14	3.3
	15	3.3
	16	0
	18	0
	19	3.3
	21	0
	22	3.3
	24	3.3
	25	3.3
	27	0
	28	3.3
	30	0
	31	3.3
	32	3.3
	33	0
	34	0
	35	0
	36	0
	38	1.6
	39	0
	40	0
	41	0
	42	0
	43	0
	44	0
IC3006	2	0
	4	0.4
IC3007	2	1.2
	4	1.8
IC3008	1	1.6
	4	2.4
IC3009	2	1.5
	4	1.1
IC3010	2	0.5
	4	0.4
IC3011	2	0
	4	0
Q3201	B	1.9
	E	2.6
Q3202	B	2.0
	E	2.7
Q3203	B	2.5
	E	3.2
Q3204	B	2.4
	E	3.1
Q3205	B	2.4
	E	3.1
Q3206	B	2.9
	E	3.6
Q3207	B	2.4
	E	3.0
Q3208	B	2.4
	E	3.0
Q3209	B	1.9
	E	2.6
Q3210	B	1.3
	E	2.0
Q3211	B	2.2
	E	2.8
Q3212	B	2.2
	E	2.8
Q3303	B	1.5
	E	2.2
Q3305	B	2.3
	E	3.0
Q3306	B	2.3
	E	3.0

• BB BOARD DESCRIPTION

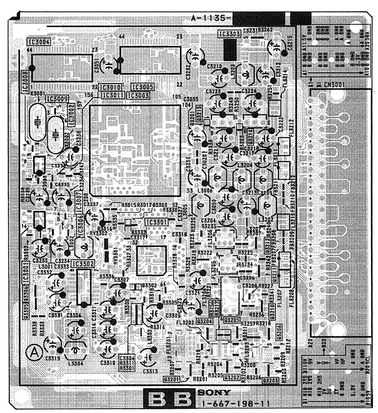
REF. NO.	
IC3002	CLOCK OSC
IC3003	MIO
IC3004	MEMORY
IC3005	MEMORY
IC3008	SW
IC3009	CLOCK OSC
IC3010	SW
IC3011	SW
IC3301	3CH 8BIT A/D
Q3201	BUFFER
Q3202	BUFFER
Q3203	BUFFER
Q3204	BUFFER
Q3205	BUFFER
Q3206	BUFFER
Q3207	BUFFER
Q3208	BUFFER
Q3209	BUFFER
Q3210	BUFFER
Q3211	BUFFER
Q3212	BUFFER
Q3303	CLAMP LEVEL
Q3305	CLAMP LEVEL
Q3306	CLAMP LEVEL

— BB Board (Conductor Side) —



: Pattern from the side which enables seeing.
: Pattern of the rear side.

— BB Board (Component Side) —



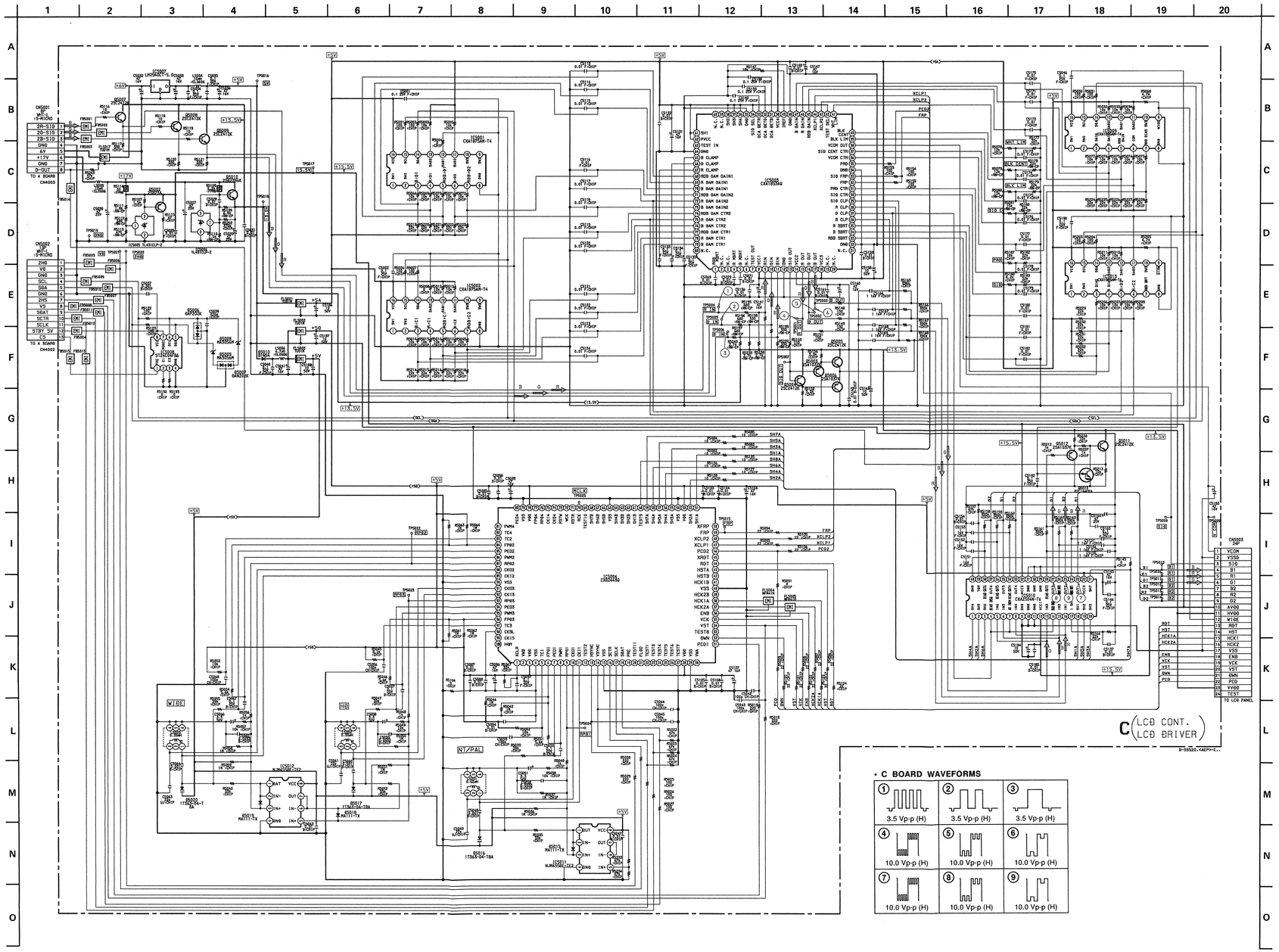
: Pattern from the side which enables seeing.
: Pattern of the rear side.

BB BOARD
Terminal name of semiconductors in silk screen printed circuit (✻)

Ref.	✻
Q3207–Q3209	①
Q3201–Q3206	②
Q3210–Q3212	

✻: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 34)

(5) Schematic Diagram of C Board



• C BOARD WAVEFORMS

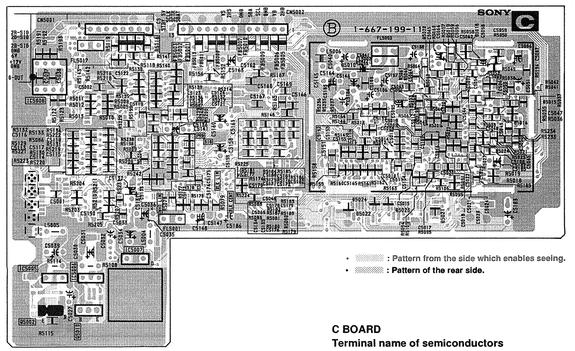
① 3.5 Vp-p (H)	② 3.5 Vp-p (H)	③ 3.5 Vp-p (H)
④ 10.0 Vp-p (H)	⑤ 10.0 Vp-p (H)	⑥ 10.0 Vp-p (H)
⑦ 10.0 Vp-p (H)	⑧ 10.0 Vp-p (H)	⑨ 10.0 Vp-p (H)

Schematic diagram ← BB board

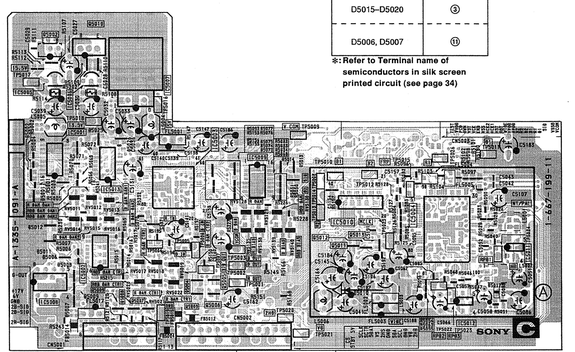
Schematic diagram C board →

C [LCD CONT. / LCD DRIVER]

— C Board (Conductor Side) —



— C Board (Component Side) —



C BOARD
Terminal name of semiconductors in silk screen printed circuit (✻)

Ref.	✻
Q5003–Q5009	②
Q5011–Q5013	
D5015–D5020	③
D5006, D5007	⑪

✻: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 34)

• C BOARD VOLTAGE LIST

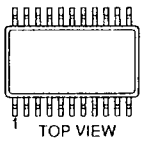
Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
IC5001	3	2.5	IC5008	5	4.9		15	7.1		6	2.3	Q5004	B	7.1
	4	2.5		6	4.7		16	7.1		7	2.3		E	6.5
	5	4.6		7	4.3		17	1.1	IC5012	1	2.0	Q5005	B	7.6
	6	2.5	IC5009	3	2.5		18	4.5		2	2.0		E	7.1
	7	0.4		4	2.5		19	0.6		3	2.0	Q5006	B	6.5
	11	4.8		5	2.1		20	0.6		5	0.7		E	7.0
	12	0		6	2.6		21	0.6		6	1.3	Q5007	B	2.5
	13	4.8		7	1.9		23	7.1		7	1.3		E	2.0
	14	4.4		9	4.9		24	7.0	IC5013	3	2.5	Q5008	B	2.6
	15	5.0		11	4.8		25	7.1		4	2.5		E	2.0
IC5002	3	2.5		12	4.8		26	7.0		5	2.5	Q5009	B	2.5
	4	2.5		13	4.8		27	7.1		6	2.5		E	2.0
	5	3.2		14	4.9		28	7.0		7	2.5	Q5010	B	14.1
	6	2.6		15	*		33	7.1		9	0			
	7	0.4	IC5010	1	0.6		34	7.0		11	0	Q5011	B	7.6
	11	4.8		2	0.6		35	7.1		12	4.8		E	7.2
	12	4.8		3	0.6		36	7.0		13	4.8	Q5012	B	7.1
	13	0		4	7.0		37	7.1		14	4.8		E	7.6
	14	4.9		5	7.0		38	7.0		15	4.8	Q5013	B	0.1
	15	3.3		6	7.1		39	1.1	Q5002	B	14.8		C	7.6
IC5005	1	2.4		7	7.0		40	0.6		C	0.1			
	3	14.8		8	7.1	IC5011	1	1.3	Q5003	B	7.1			
IC5006	1	2.4		13	7.0		2	1.3		E	7.6			
	3	14.4		14	7.0		3	0.8						
							5	2.3						

• C BOARD DESCRIPTION

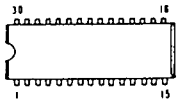
REF. NO.		REF. NO.	
IC5001	D/A C	Q5007	BUFFER
IC5002	D/A C	Q5008	BUFFER
IC5003	RGB DRIVER	Q5009	BUFFER
IC5004	TIMING GENERATOR	Q5010	REGULATOR
IC5005	REGULATOR	Q5011	BUFFER
IC5006	REGULATOR	Q5012	BUFFER
IC5007	REGULATOR	Q5013	SW
IC5008	NVM		
IC5009	D/A C	D5006	PROTECT
IC5010	SAMPLE HOLD	D5007	PROTECT
IC5011	CLOCK OSC	D5008	PROTECT
IC5012	CLOCK OSC	D5009	PROTECT
IC5013	D/A C	D5010	CLAMP
		D5015	CLAMP
Q5002	REGUATOR	D5016	VCO
Q5003	SIG. DRIVE	D5017	VCO
Q5004	SIG. DRIVE	D5018	CLAMP
Q5005	SIG. OUT	D5019	CLAMP
Q5006	SIG. OUT	D5020	VCO

5-4. SEMICONDUCTORS

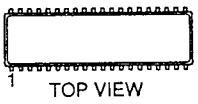
BA7046F
BA7046F-T1
CXA1875AM-T4
MB3793-42PNF
MB3793-42PNF-ER
MC14066BF
MC14066BFE
MC14528BDR2
MC14528BF
MC14528BF-T2
MC74F02M-T2
MC74F08M
MC74F08M-T2
NJM2240M
NJM2240M-TE2
TLC2932IPW
TLC2932IPW-E20



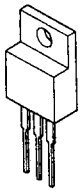
CXA1815S



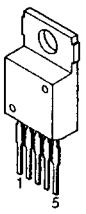
CXA1855S
NJM4558E-TE2
TEA2114



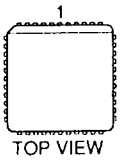
LM2940CT-5.0
LM7808CT
MC7808CT
MC7808CT
µPC2405HF



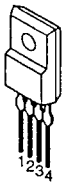
MC14052BF
MC14052BF-T2



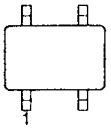
MSP3410D-PS-B4-T
SDA30C146-2-GEG
SDA5273P-C134-G
SDA5273P-C134-GEG



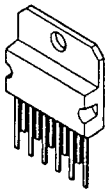
PQ05RF21
PQ09RF21



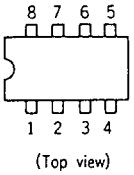
SC7S04F
TC7S04F-TE85R



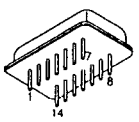
TDA2009A



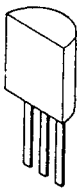
TDA2822M



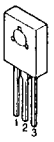
TC7SHU04FU
TC7SHU04FU-TE85



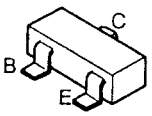
TL431CLP
TL431CLPRA
TL431CLP-Z
TL431CLP-Z20



µPC78N05H

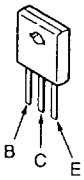


DTA-114EKA-T146
DTC114EK
DTC114EK-T146
DTC124EK
DTC124EK-T146
DTC144EKA
DTC144EKA-T146
2SA1037K-T-146-QR
2SA1037K-T146-R
2SA1162-G
2SC1623-L5L6
2SC2412K-T-146-QR
2SC2412K-T-146-R
2SC3052-EF

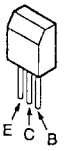


DTC114ESA
DTC114ESA-TP
2SA933AS-QRT
2SA933AS-RT

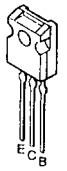
2SA1282ATP-EF
2SD2396H
2SD2396K



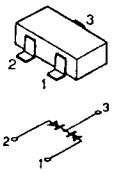
2SB734-34
2SB734-T-34
2SD774-34
2SD774-T-34



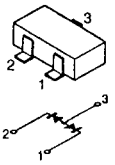
2SC4833MNP



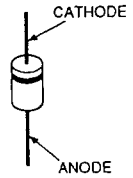
DAN202K
DAN202K-T-146



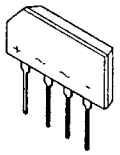
DAP202K
DAP202K-T-146



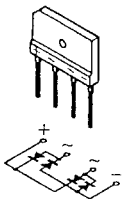
D1NL20-TR
EGP10D
EGP10DPKG23
S2LA20F
1SS133T-77



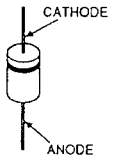
D2SBA60F



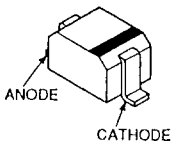
D4SB60L
D4SB60L-F
D10SBS4
D10SBS4F
RBA-406B



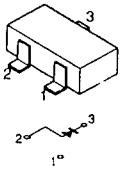
EL1Z
MTZJ-T-77-9.1
MTZJ-T-77-9.1A
RGP10GPK23



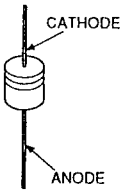
MA111
MA111-TX
1T363
1T363-04-T8A



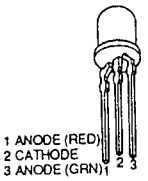
MA3051L-TX



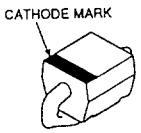
D1NS4
D1NS4-TA
MTZJ-T-77-10
MTZJ-T-77-13B
MTZJ-T-77-15B
MTZJ-T-77-33C
MTZJ-T-77-5.6B
MTZJ-T-77-6.8
MTZJ-13B
MTZJ-33C
MT2LA20F
RD10ESB2
RD15ES-B2
RD30ESB2
RD30ES-T1B3
RD5.6ESB2
RD6.8ES-B2
1SS119-25
1SS119-25TD



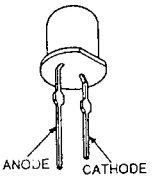
SPR-39MVWF



UF4005PKG23

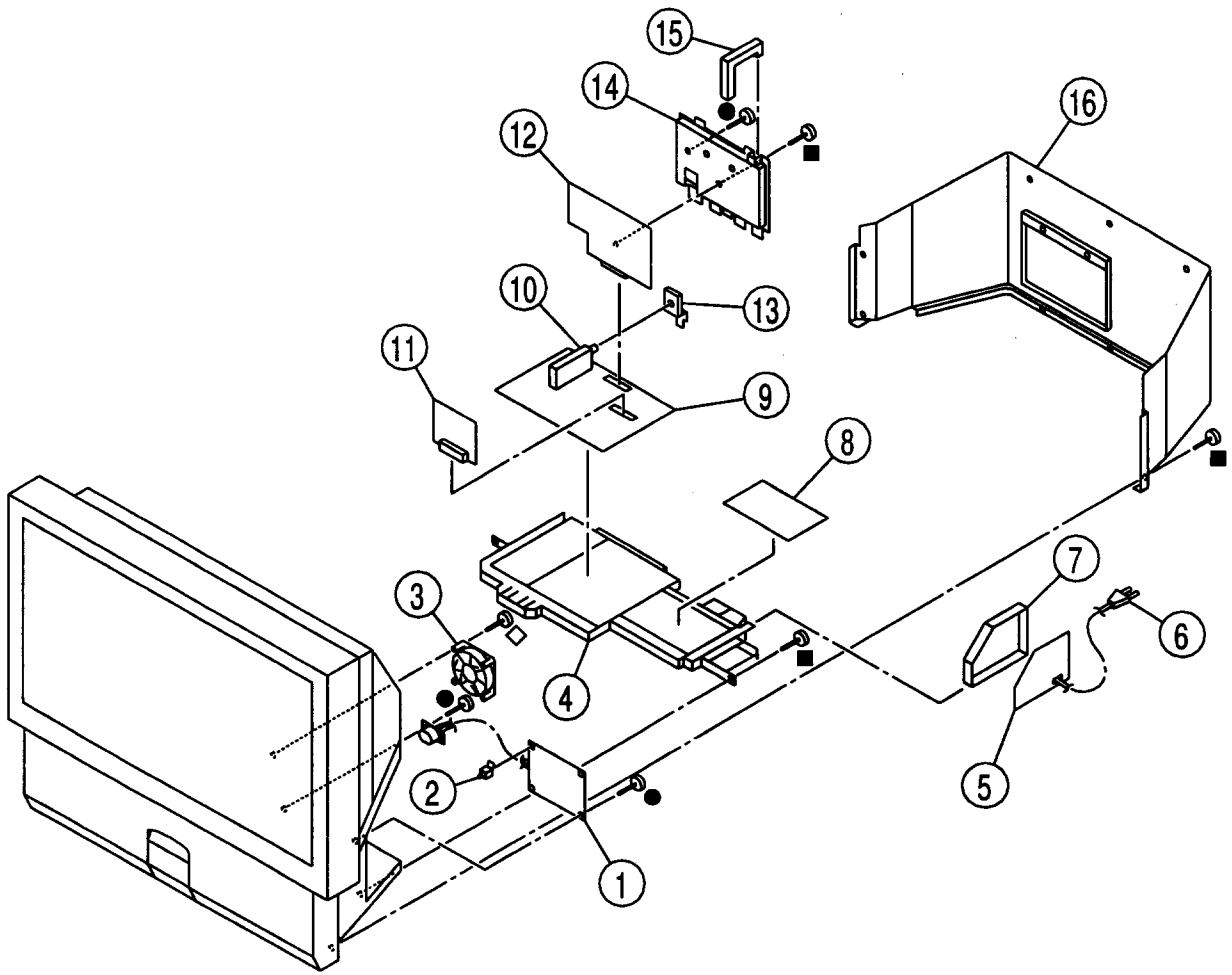


TLR124



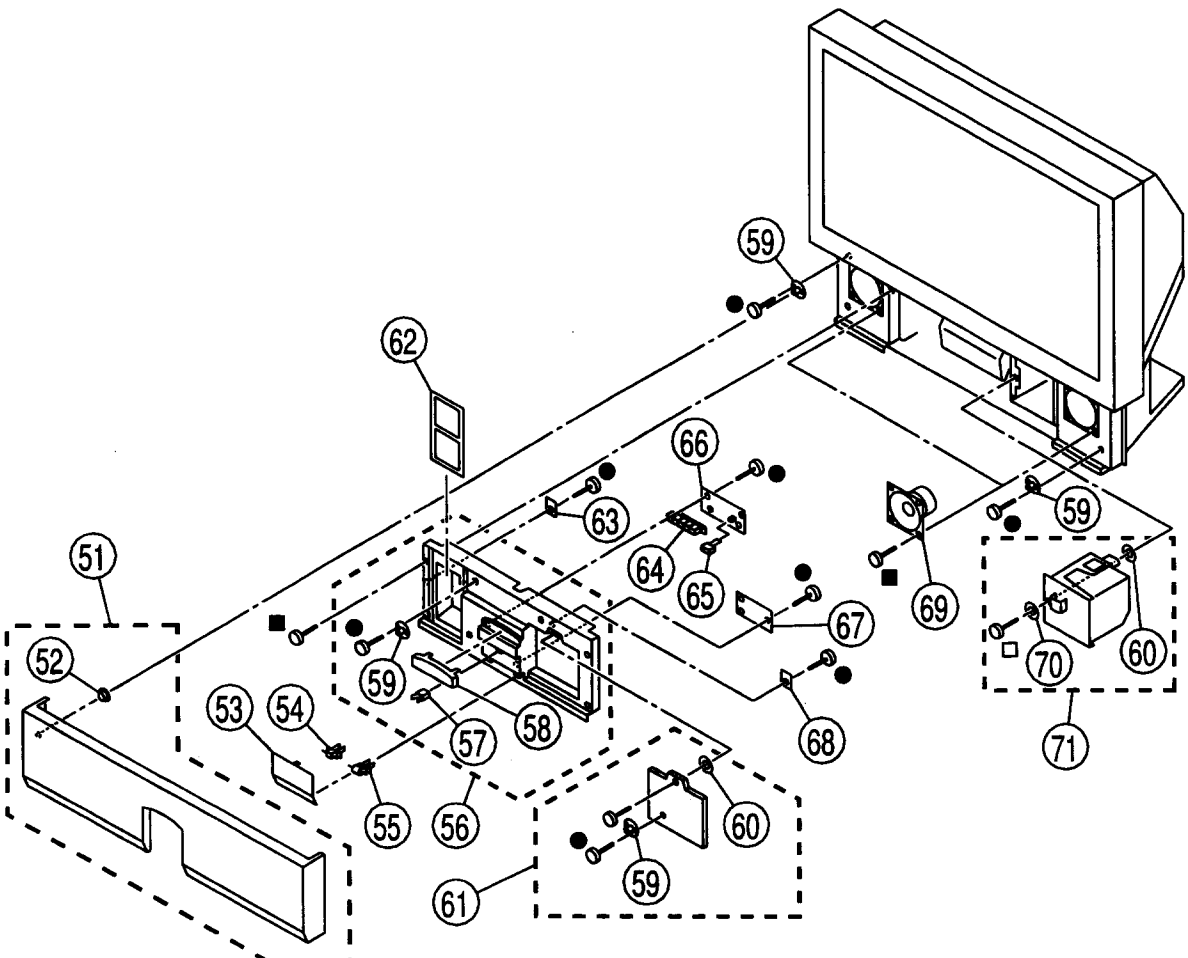
6-1. CHASSIS

● 7-685-648-79 +BVTP 3X12
■ 7-685-663-79 +BVTP 4X16
◇ 7-685-167-19 WASHER HEAD SCREW +P 4X35

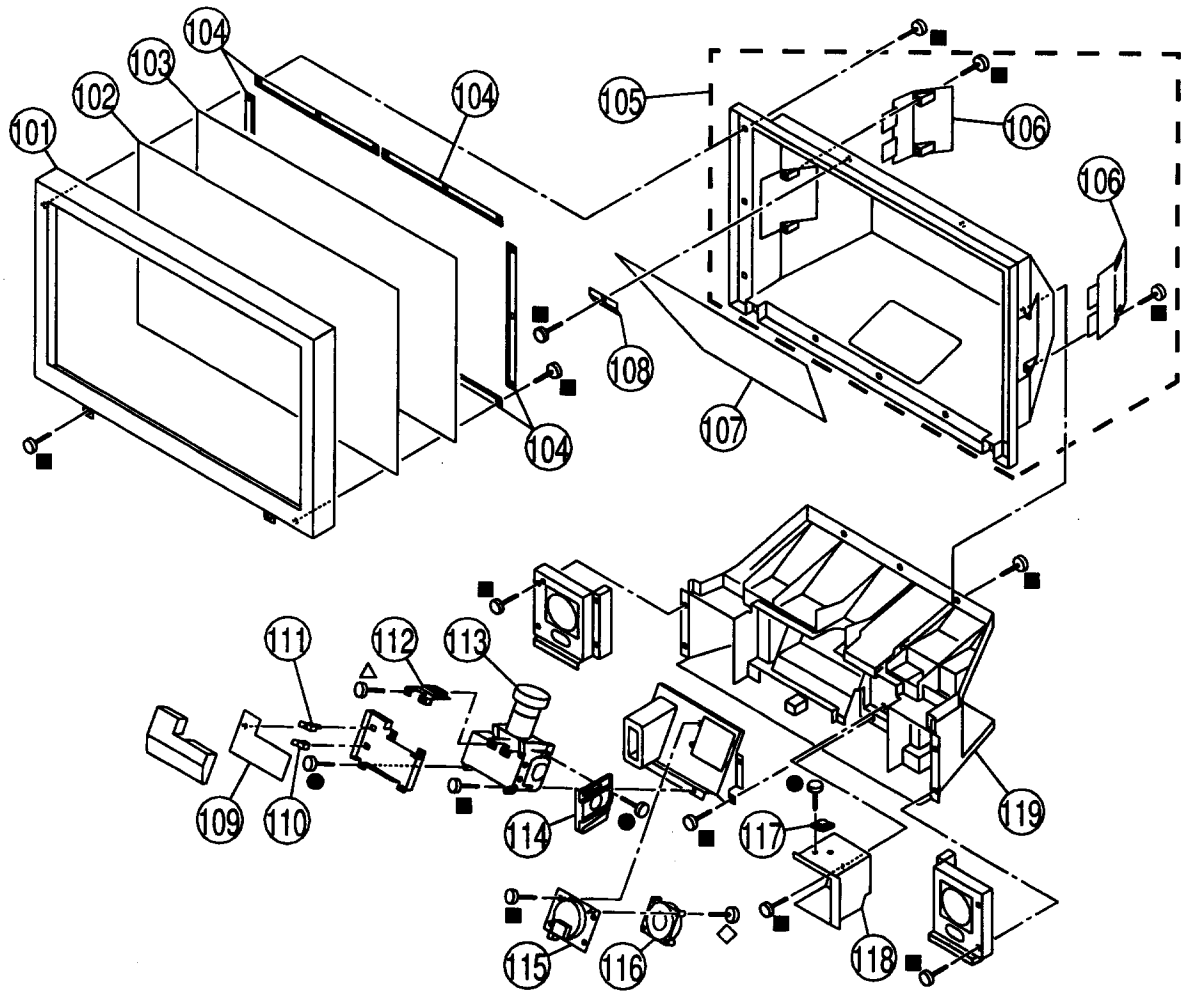


6-2. FRONT COVER

● 7-685-648-79 +BVTP 3X12
■ 7-685-663-79 +BVTP 4X16
□ 7-683-421-04 HEXAGON SOCKET BOLT 4X12



6-3. SCREEN MIRROR BLOCK AND OPTICAL UNIT

●	7-685-648-79	+BVTP 3X12
■	7-685-663-79	+BVTP 4X16
◇	7-685-167-19	WASHER HEAD SCREW +P 4X35
△	7-621-763-45	+PSW 2.6X6

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.